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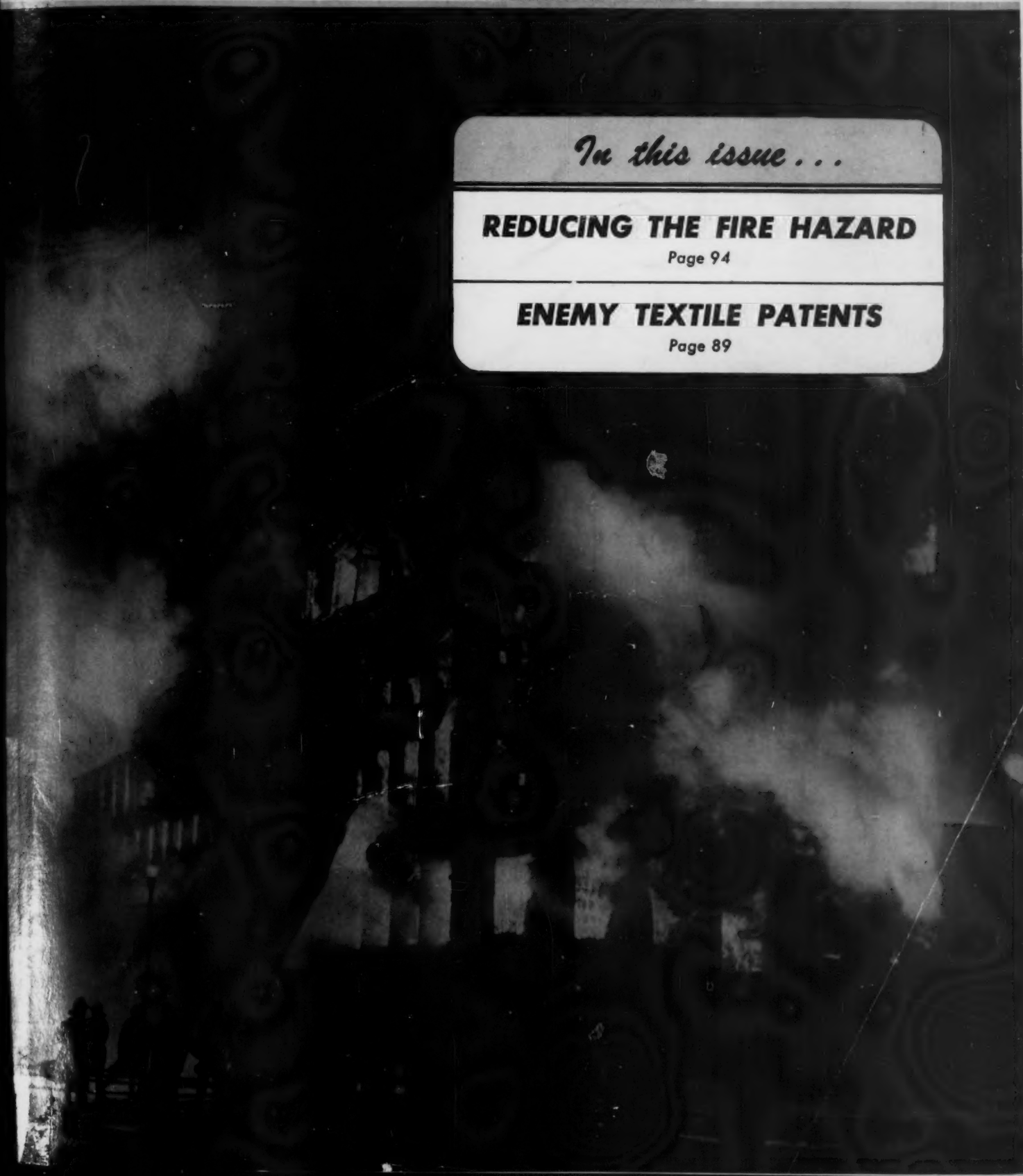

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TEXTILE WORLD

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THE *Long-Range* VIEW

The EVERSHED REPORT

Hailed as revolutionary, the Evershed Report on the British Cotton Spinning Industry contains many constructive recommendations but nevertheless accentuates several most dangerous practices that will continue to be stumbling blocks for the British textile industry. It would be most unfortunate if we ever permitted some of them to become established here.

The Evershed Report is the answer to the Platt Report [TEXTILE WORLD, Jan., 1945, p. 82] which showed the British textile industry to be far less efficient than that of the United States. It has long been known that trade-union restrictions have been instrumental in holding back British technological improvements, principally the installation of better machinery. The Evershed Report strikes the heart of these restrictions—but at the same time imposes serious limitations on existing equipment and methods of operation by tying wages to job assignments!

For example, we can endorse the report when it says, "Where greater production by the operative is attributable to new methods or to improvements in machinery, some part—increasing with the amount of production—of the benefit of the increased production should belong to the business installing the improvement and go in reduction of its costs of production, the balance being paid the operative." Encouraging the installation of new machinery is fine, but surely there are a great many improvements which can be made immediately with existing equipment to reduce costs or raise wages—but which are tacitly discouraged by this same report when it presents such recommendations as, "The wages of the draw-frame tenter [tender] should be directly related to the weight of the material put through." The report also recommends that "a spinner and an assistant spinner . . . shall form the permanent skilled staff of a pair of mules" and "wage rates for three machines per operative, being one opener and two finishers or other equivalents, shall be £5 8s. 4d. for a week of 48 hours."

It is quite all right for the report to name minimum wages per hour for an occupation; but to tie a wage to a machine assignment is, in effect, advocating the erroneous principle of payment for what the machine does rather than for the work the operator performs.

The Evershed Report in many respects is similar to recent studies of wages in the New Bedford, Mass., area; but in no instance were the American rates, as recommended by the Northern Textile Commission (NWLB), tied to machine loads. Let us hope they never will be, or much of the incentive to improve production is lost.

Practical mill men can quickly tell you why you cannot tie a rate to the number of machines to be attended in all mills. Jobs vary too much. Take drawing-frame tenders (whose rates the Evershed Report recommends be based on weight of the material put through): On the same weight of yarn a tender might have infinitely less cleaning to do if the sliver is intended for osnaburgs than if for fine sheetings. The operator must work infinitely harder to produce a given poundage for sheetings than for osnaburgs. The machine runs the poundage; the operators' work is something quite different, and it can be expressed in terms of pounds produced only indirectly. The Evershed Report would be infinitely more valuable if it contained more than just a passing remark on the use of time studies "to arrive at a just appraisement of the respective work loads."

It seems inconceivable here that paying "absentee wages" to remaining workers, as practiced around Lancashire, could have any economic justification. Workers that can take over the complete duties of an absentee certainly do not have a full job, as would be determined by modern time study. On one hand, the Evershed Report condemns sharing absentee wages, but on the other it encourages, even sanctions, conditions that are equally as uneconomic, such as promoting apprentices on basis of seniority and increasing wages according to ages from below 15 to 21 without regard to operator efficiency.

In the United States, wages of cotton-textile workers are not directly tied to machines attended. Wages, instead, aim to compensate a particular degree of skill with the purpose of getting, in the main, the highest amount of production for the human effort expended. Perhaps that is the secret of so much greater productivity by U. S. cotton-textile workers.

C. H. Bendigo

How to save 4 ways at every spindle—

TODAY, with production-proved Gargoyle Velocite Oils in your spindles, you'll find that you can add up these four important savings at *every spindle:*

First, you save production time. These quick-acting oils distribute instantly through small clearances, form strong films that resist rupture and keep spindles on the job longer.

Second, you save power. The high lubricating properties of Gargoyle Velocite Oils minimize friction that causes "spindle drag."

Third, you save maintenance costs. With wear reduced to a minimum, you have less repairs and replacements.

Fourth, you save ultimate lubrication costs. Gargoyle Velocite Oils resist oil loss from fagging. They last longer because they fight off gummy deposits.

Why be satisfied with anything less than the best spindle oil, with so much to gain so many places?

Get this Complete Lubrication Program for all your machines

- **Lubrication Study of Your Entire Plant**
- **Recommendations to Improve Lubrication**
- **Lubrication Schedules and Controls**
- **Skilled Engineering Counsel**
- **Progress Reports of Benefits Obtained**

GARGOYLE Lubricants

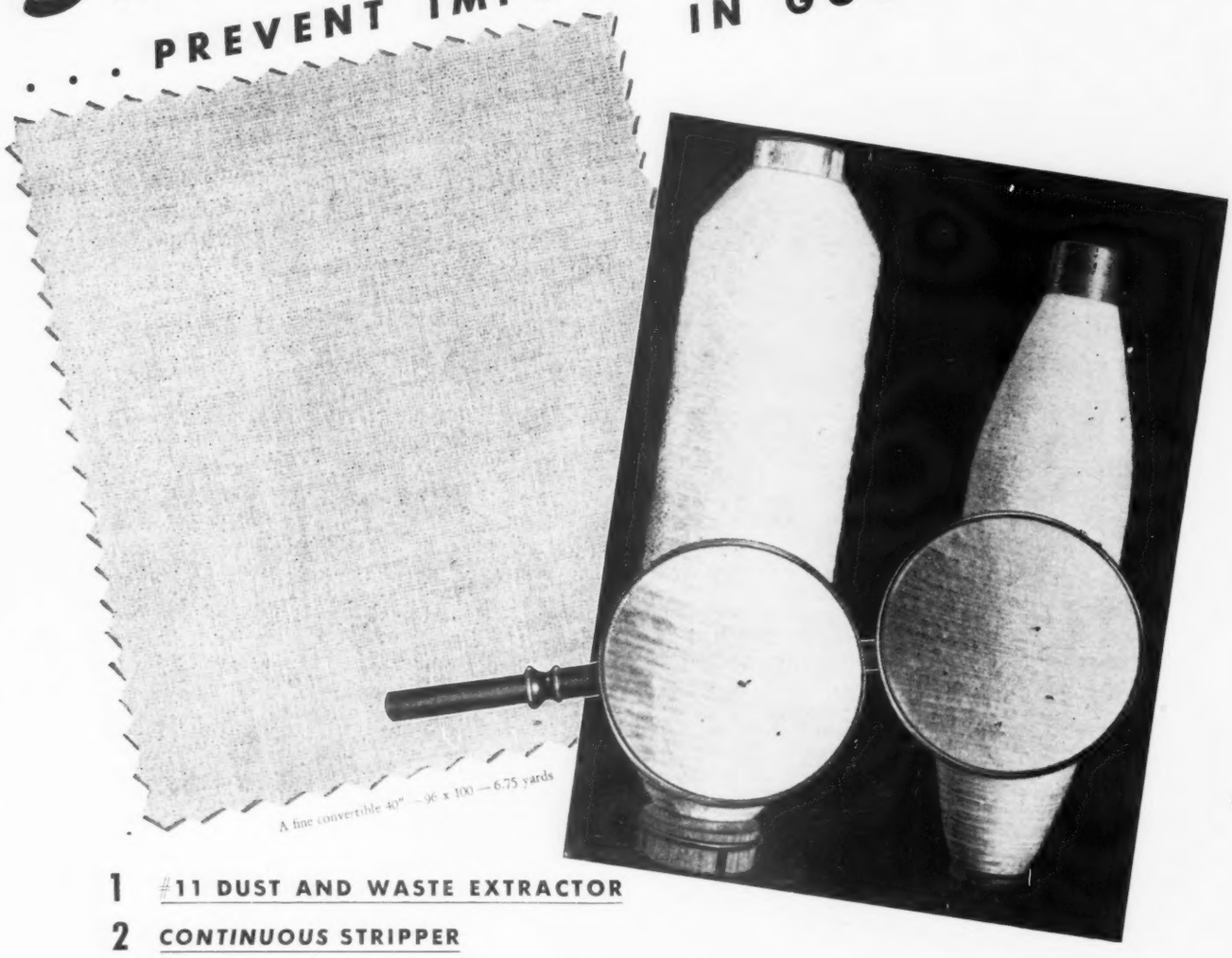
Socony-Vacuum Oil Co., Inc.

and Affiliates: Magnolia Petroleum Co. · General Petroleum Corp. of Calif.

TUNE IN "INFORMATION PLEASE"—MONDAY EVENINGS, 9:30 E.S.T.—NBC

3 HELPS TO CLEANER CLOTH

. . . PREVENT IMPURITIES FROM HIDING IN GOOD YARN



1 #11 DUST AND WASTE EXTRACTOR

2 *CONTINUOUS* STRIPPER

3 WASTE CONTROL SCREEN

It doesn't take any more time to make cleaner yarn than it does to make yarn which is packed with nep, leaf and other foreign particles. And while no process has yet been developed which will remove every single impurity, many that do "get by" can be removed before it is too late.

Saco-Lowell has developed three effective units which maintain a constant attack on these impurities.

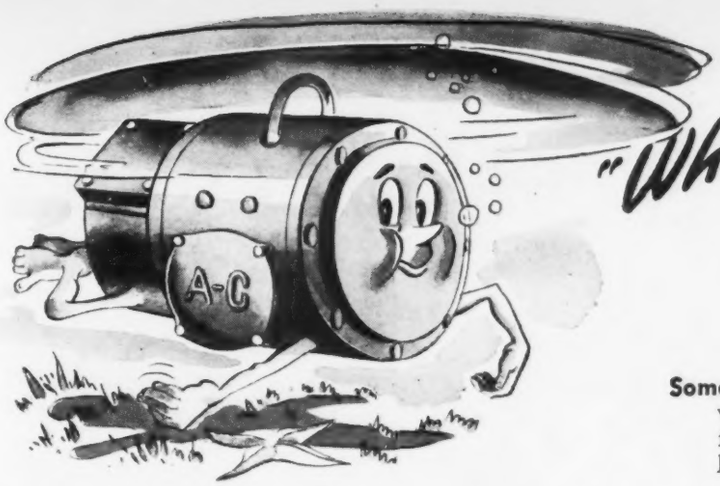
First is the Saco-Lowell #11 Dust and Waste Extractor which removes the great bulk of fine, peppery leaf, nep and dirt.

The next point of attack is at the card. Here, by using a "combat team" composed of the Continuous Stripper and the Waste Control Screen, it is possible to keep the cylinder wire in such an active condition that there is a definite reduction in the amount of nep, leaf and other impurities in the web.

As a means of estimating the amount of impurities that are now "getting by" we suggest you make a nep and leaf count on ten square inches of cloth. Should you find this count too high our engineers may be able to make some helpful recommendations.

Saco-Lowell Shops

BOSTON, MASSACHUSETTS • *Charlotte, Greenville, Atlanta*

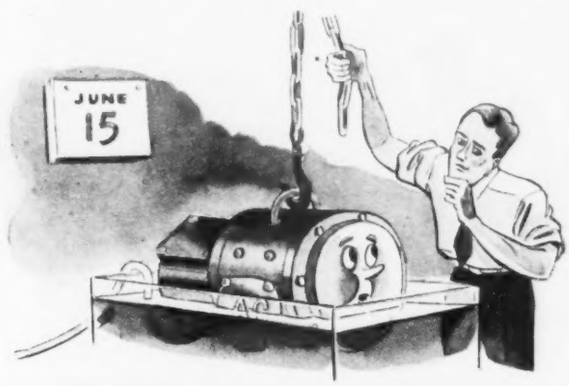


"What! Build a Motor to Run Underwater for 90 Days?"

Some said "Impossible!" But the Navy insisted, "We want a motor that likes water so well it'll run in 25 feet of it for 90 days. What's more—it's got to be lighter, more compact than standard motors."

No diving suits allowed! Biggest problem was water-proof, pressure-proof casings. Cast-iron wouldn't do — too porous. So we turned to fabricated steel — tough, durable — and lightweight too!

Then we found that fabricated parts could be successfully welded together to assure water-tightness. For proper magnetic characteristics, we decided to use field yokes of one-inch rolled steel.



Things look better! We reinforced end-housings, double-checked insulation, made sure exposed parts were leak-proof. Nothing left to do but put our baby in the test-tank, check it regularly, and hold our breath.

90 days later—we took a good look. Motor still running and not a drop of water inside! That called for a short cheer and wide smiles all around. Mass production of these motors followed.

There's a Moral: Every time Allis-Chalmers engineering solves *special* motor problems, we discover new ways to build better standard motors for you. ALLIS-CHALMERS, MILWAUKEE 1, WIS.

A 1927

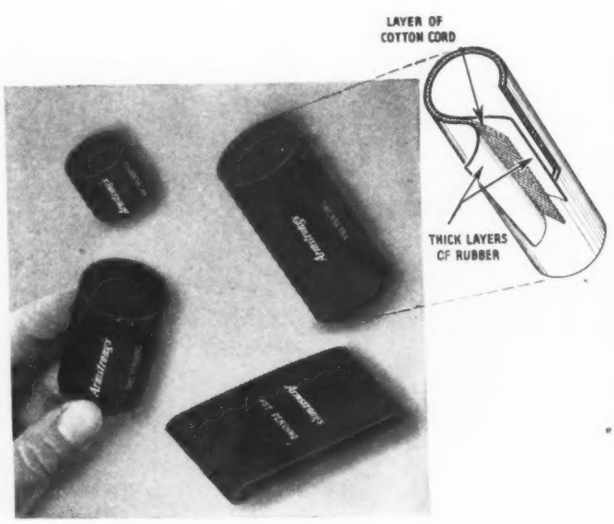
Wait 'til you see the NEW

ALLIS-CHALMERS MOTORS!

HEAR THE BOSTON SYMPHONY: *Every Saturday Evening, American Broadcasting Co.*

This apron does not stretch

Diagram Shows Why Accotex Aprons Are Non-Stretching



Years of wear won't change dimensions of Accotex Aprons because of their special patented construction shown at left. Besides non-stretching, Accotex Aprons offer these other important operating advantages:

LONG LIFE: Accotex Aprons in continual service for more than three years show little sign of wear.

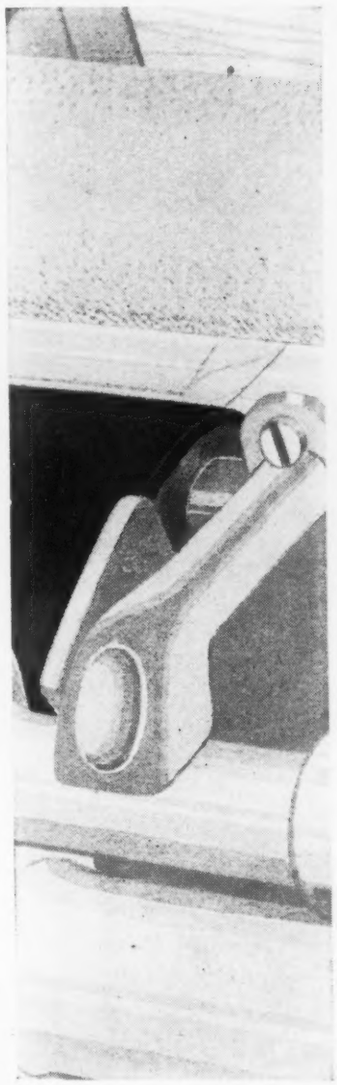
UNIFORMITY: All Accotex Aprons have the same composition throughout, and dimensions of every size are accurate.

CLEAN-RUNNING: Accotex Aprons do not crack or scuff. Thus they assure cleaner-running work and less waste.

REDUCED LAPPING: Accotex Aprons are not affected by temperature or humidity. They perform with a minimum of lapping.

GOOD FRICTION: The efficient "grip" of Accotex Aprons keeps slippage at a minimum.

or "grow"...drafts more even yarn



You get stronger, more uniform yarn from Armstrong's Accotex Long Draft Aprons because they're reinforced with a cord interliner that prevents stretching . . . keeps tension constant. Even after years of hard service in the mill, an Accotex Apron will still fit snugly on the same form on which it was made in the factory.

Accotex Aprons also give you a tough wearing surface on both the inside and outside of the apron. Two heavy layers of non-oxidizing, highly oil-resistant synthetic rubber enclose the non-stretch interliner. And because Accotex Aprons are seamless, they won't tear or break open during operation. Barring accidents, uniform long life is assured.

For free samples, prices, and complete information on Armstrong's Accotex Aprons, see your Armstrong representative. Or write today to Armstrong Cork Company, Textile Products Dept., 8301 Arch Street, Lancaster, Pa.

Also by the makers of Accotex Aprons

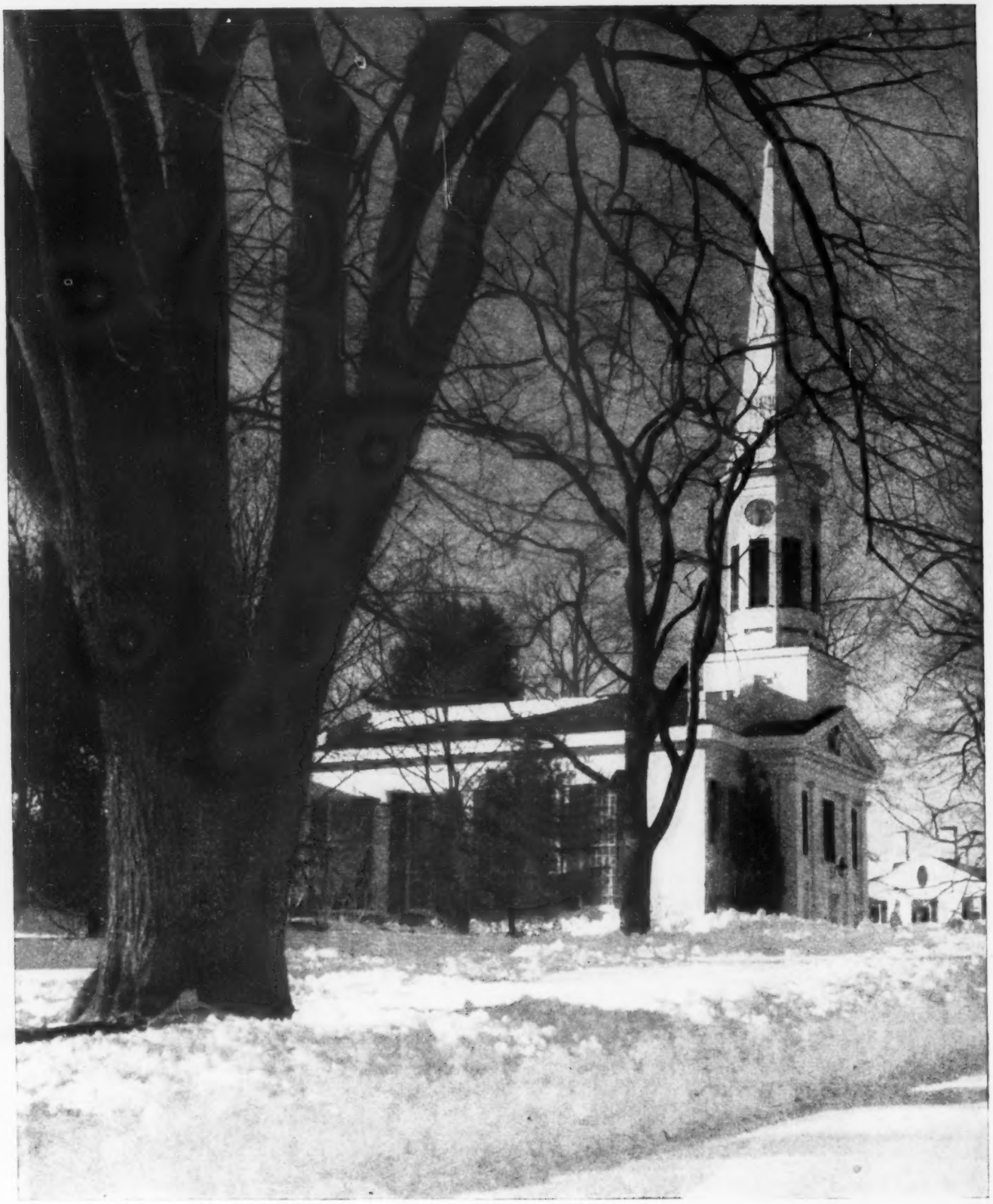
. . . the Accotex Cot

The same kind of specialized research and technical skill that created Accotex Aprons also produced Accotex Cots. These synthetic cots, too, can help you spin more even, better quality yarn. They offer these eight advantages:

1. **LONG SERVICE**—Accotex Cots are tough. And they can be rebuffed 3 or 4 times.
2. **GOOD DRAFTING**—Accotex Cots resist slicking.
3. **REDUCED EYEBROWING**—Resistance to slicking minimizes eyebrowing.
4. **SOLVENT RESISTANCE**—Accotex Cots are not affected adversely by oil, water, dyes, or textile solvents.
5. **SEAMLESS CONSTRUCTION**—Accotex Cots have no seams—can't break open in service to shorten normal life.
6. **QUICK ASSEMBLY**—Accotex Cots are ready glued.
7. **REDUCED LAPPING**—Accotex Cots have little affinity for textile fibers. In addition, they are non-sweating.
8. **GOOD START-UP**—Accotex Cots are non-thermoplastic and resist flattening.

ARMSTRONG'S ACCOTEX APRONS

ACCOTEX COTS • CORK COTS

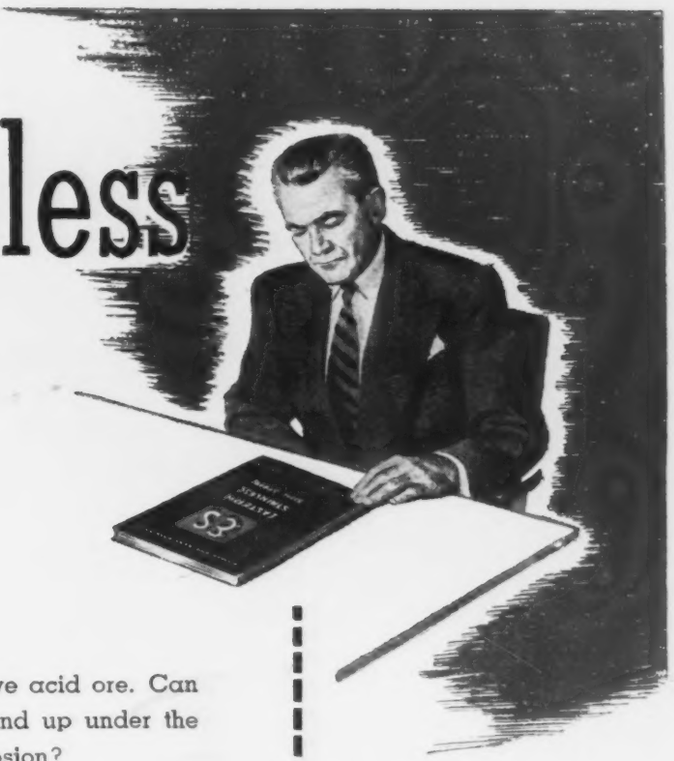


"And now the New Year Road shall lead
To a brighter world where the hearts of men
Shall cast away all dark'ning fears
And Righteousness shall rule again!"

HOWARD BROS. MFG. CO.
WORCESTER, MASS.

Harry C. Coley
President

which Stainless *shall I use?*



MINE CARS?

Our mine cars handle a moist abrasive acid ore. Can we get a Stainless Steel that will stand up under the abrasion, and also resist the acid corrosion?

HEAT TREATING EQUIPMENT?

Our heat treating furnaces operate up to 1,500° F. Can we replace the hoods with Stainless? If so, which grade do you suggest?

CHEMICALS?

We are thinking of using Stainless Steel sheets for the lining of our dye vats. What grade and finish of Stainless Steel would you recommend?

MARINE HARDWARE?

Please send us your recommendation for the best grade of Stainless Steel for use in marine hardware, including rudders and fins.

Such questions on Stainless Steel selection are typical of questions which Eastern Stainless representatives answer every day. Eastern Stainless offers *all* the stainless grades you need for specialized applications of stainless steel sheet and plate. Consult Eastern on your selection problem.

Many of the answers are in the 96-page "Eastern Stainless Steel Sheet" handbook which, because of the great demand for copies, is now in its second printing. Write for your copy on your company letterhead.

JMLCO. E-81

ask Eastern for the answer when Stainless is the question

EASTERN STAINLESS
STEEL CORPORATION
BALTIMORE 3, MARYLAND · Distributors' stock available in most areas
CHICAGO · CLEVELAND · DALLAS · DETROIT · LOS ANGELES · NEWARK · PHILADELPHIA

THE NUT *that reduces "Down Time"*

YES, THE ELASTIC STOP NUT

Textile men will recognize this picker stick as a potential trouble spot, a constant threat of interrupted production and high maintenance costs.

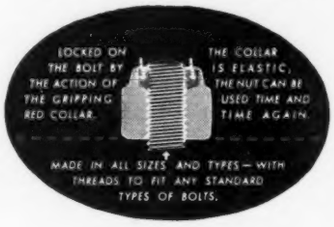
But loom fixers will recognize the red-collar remedy applied here — because there is growing familiarity with Elastic Self-Locking Stop Nuts, the famous red-collar nuts with the earned reputation for overcoming shock, impact and vibration.

Scores of Elastic Stop Nuts are used on a single loom, absorbing violent punishment in many places, as in the heel bolt and lug strap connections of the picker illustrated. In all its applications, the nut with the red collar proves it can hold fast and stay put.

The red collar of the Elastic Stop Nut eliminates the loosening effects of shock, impact and vibration. The collar is unthreaded and gauged slightly smaller than the bolt. It is made of tough, strong, durable material. The bolt threads force their way in, do not cut. The result is a two-sided friction grip on the bolt threads that grips firmly. And because the collar is resilient, the Elastic Stop Nut may be used over and over again.

Solve your loose nut problems by equipping your machines with Elastic Stop Nuts and keep them running.

LOOK FOR THE RED COLLAR
THE SYMBOL OF SECURITY


LOCKED ON THE BOLT BY THE ACTION OF THE GRIPPING RED COLLAR.
THE COLLAR IS ELASTIC, THE NUT CAN BE USED TIME AND TIME AGAIN.
MADE IN ALL SIZES AND TYPES—WITH THREADS TO FIT ANY STANDARD TYPES OF BOLTS.

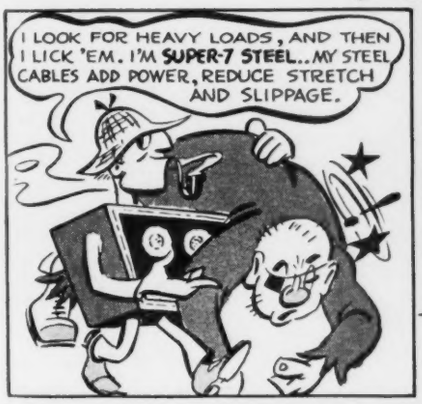
ESNA
TRADE MARK

ELASTIC STOP NUT CORPORATION OF AMERICA
Union, New Jersey

LOOKING for TROUBLE!

Designed to stand up in trouble spots, America's newest and widest line of V-Belts — Allis-Chalmers' Texrope — solves every one of these drive problems.

I FIND MY PLACE WHERE EXPLOSION IS A DANGER. I'M SUPER-7 STATIC RESISTING; MY BUILT-IN CONDUCTING ELEMENT CARRIES CHARGES TO THE MACHINE WHERE THEY'RE GROUNDED



Texrope V-belts are available nation-wide through Allis-Chalmers Dealers and Sales Offices. It pays to make Allis-Chalmers your V-belt drive headquarters.

ALLIS-CHALMERS

Texrope Super-7 V-Belts result from the cooperative research of two great companies—Allis-Chalmers and B. F. Goodrich—and are sold exclusively by A-C.

A 1962

BULLETIN!

SPEED RECONVERSION WITH HELP OF NEW FREE A-C KIT!

Guide to "How to Take Reconversion Inventory" of Drives, Motors, Pumps

Help in the big job of reconverting for peacetime production is now offered to plants everywhere by Allis-Chalmers Mfg. Co., its district offices and distributors. To all who request it, we're sending the new "Reconversion Inventory Kit", planned to speed the task of determining the condition of your existing equipment — V-belt drives, motors, and centrifugal pumps — which will be used in reconverted production.

SUGGESTS PROCEDURE, STATES STANDARDS

Used by foremen, maintenance men, and engineers, the Kit is a real time-saver . . . leads efficiently to probable trouble spots, helps clear them up. Gives bearing tolerances, resistance formulae, etc., in compact, easily-used form. Check List appraisal charts help determine present and future condition of units inventoried.

HOW TO GET YOUR KIT

For your free Reconversion Inventory Kit, call your nearest Allis-Chalmers distributor or district office, or write Dept. 137, ALLIS-CHALMERS MFG. CO. Milwaukee 1, Wis.

ALLIS-CHALMERS MFG. CO.
Dept. 137, Milwaukee 1, Wis.

Please send Reconversion Inventory Kit free of charge to:

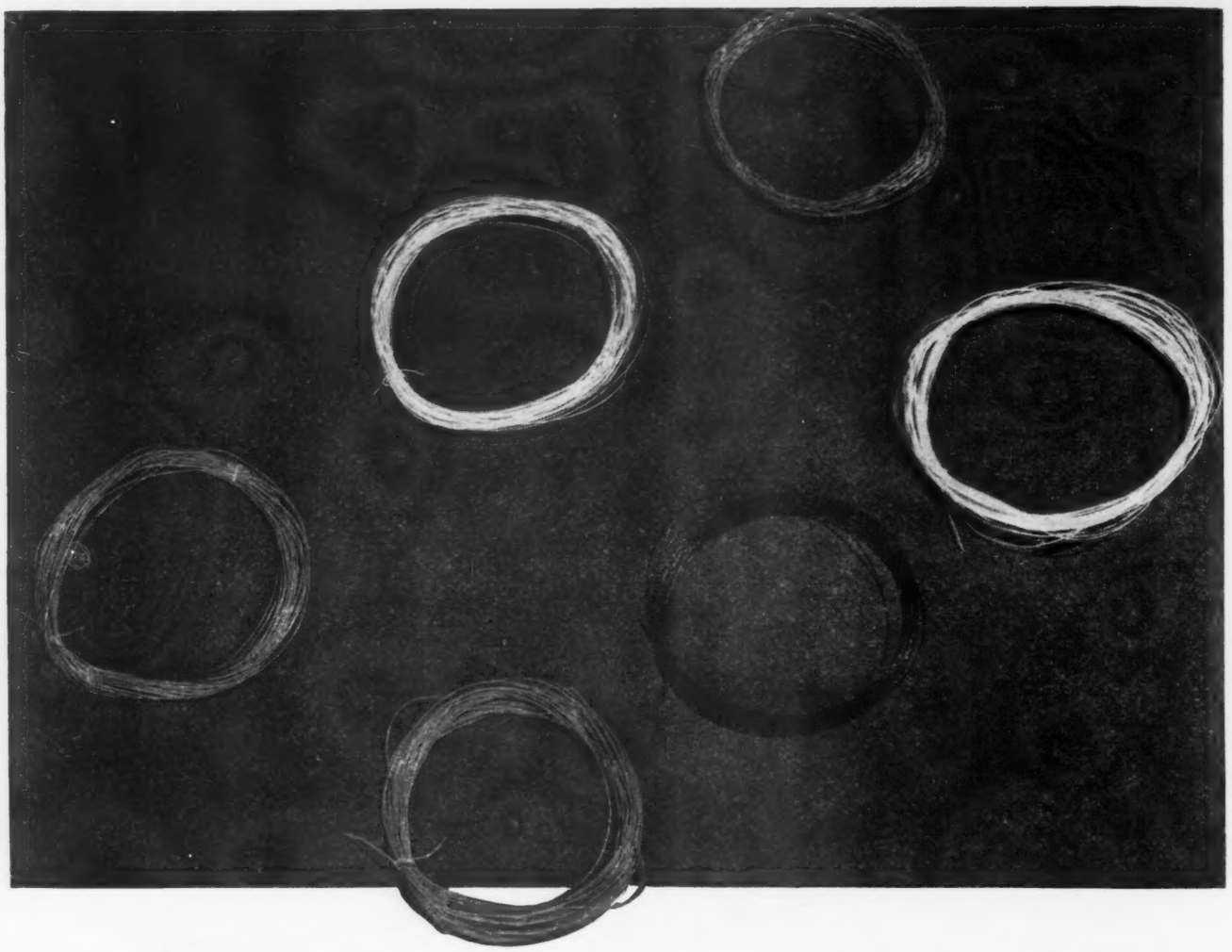
Company.....

Address.....

.....

Attn. of Mr.....

HEAR THE BOSTON SYMPHONY: *Every Saturday Evening, American Broadcasting Co.*



Geon-coated or impregnated thread opens new fields in textile industry

New latex imparts GEON's properties to any type fiber

RAYON, nylon, cotton, wool, silk, linen—*any* type of fiber, thread, or cord can be coated or impregnated with GEON latex, the new water dispersion that offers *easy, safe, fast* processing.

And all of GEON's more than 30 distinct properties may be added as a protective coating to those of the material being treated in combinations selected to meet the exact requirements of the finished product.

What are some of the possibilities that could profitably be explored? Flameproof upholstery, draperies . . . waterproof sewing thread for shoes, tents, tarpaulins . . . Foodproof tablecloths . . . The list is practically limitless.

In addition to being proof against most normally destructive elements such as acids, chemicals, food, sun, heat, cold, age, abrasion, mildew and others, GEON-coated threads may be brilliantly or delicately colored.

GEON latex offers the additional advantages of a completely *safe,* comparatively inexpensive processing procedure. No explosive, toxic fumes from solvents. No cumbersome, expensive solvent recovery systems.

While we supply only raw materials to processors and do not manufacture any finished products, we will gladly send you basic information about GEON latex for coating or impregnating fibers, threads, cords, fabrics of all kinds and paper. Please write Department H-1, B. F. Goodrich Chemical Company, 324 Rose Building, Cleveland 15, Ohio.

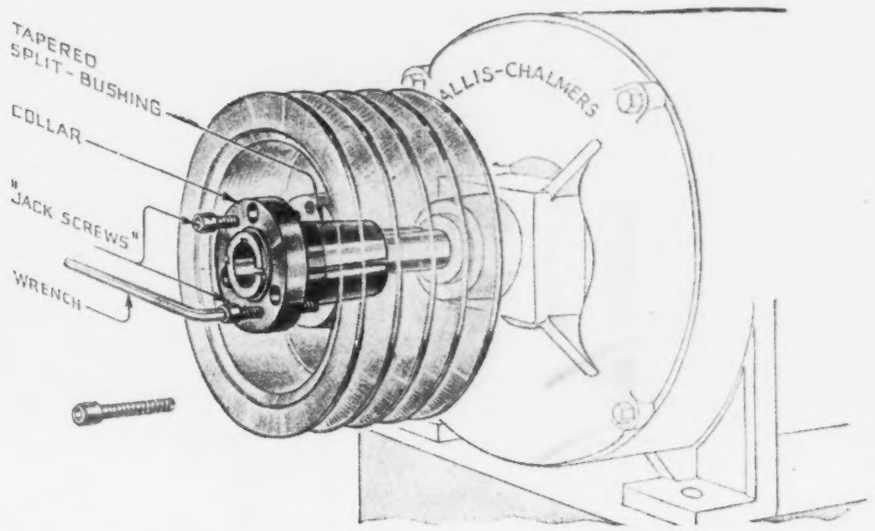
Geon
Polyvinyl Materials

B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

It's Easy to See

THE SECRET OF THE "MAGIC-GRIP" SHEAVE



Fastest mounting and demounting sheave on the market, the new "Magic-Grip" costs you nothing extra.

SEE HOW THIS SHEAVE REMOVES EASILY, SAVES TIME AND MONEY

1 **Remove three capscrews** from bushing collar with handy wrench. Insert two capscrews. When turned, they become levers... automatically breaking the tight grip of tapered split bushing on both sheave and shaft.

2 **Remove sheave from shaft.** Requires no mallet, no prying, no bulging muscles. You just slide the sheave off... smoothly, quickly. *It costs nothing extra!* Send for B6310. Allis-Chalmers, Milwaukee 1, Wis.

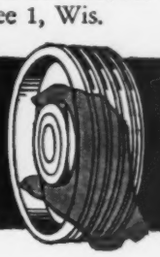
RECONVERTING?

GET THIS NEW FREE KIT!

To help you find out how your present equipment will fit into future production, A-C offers a new free "Reconversion Inventory Kit" — Fact Sheets and Check Lists to speed your appraisal of V-belt drives, electric motors, and centrifugal pumps. Applies to all makes. Call your A-C distributor or district office, or write Dept. 24, ALLIS-CHALMERS MFG., Milwaukee 1, Wisconsin.

A 1859

Allis-Chalmers Texrope "MAGIC-GRIP" SHEAVES



HEAR THE BOSTON SYMPHONY: *Saturday, American Broadcasting Co.*

How *NOT* to Pile Up Mileage *Needlessly* on Your Scrubbing Machine

It's a matter of *teamwork*... teamwork of cleanser and scrubbing machine. But that can be achieved only by using a cleanser that *keeps pace* with the speed of machine-scrubbing.

Setol, a mineral oil solvent for use on mill and factory floors, is just such a cleanser. In fact, *Setol* is specially compounded for use in scrubbing machines. It acts *instantaneously* in emulsifying grimy oil and grease . . . gives cleaning action with every turn of the brushes. This enables the machine to complete the cleaning process in minimum operating time.

Setol is a product of *Finnell's own powder mill*, as are these five other *Finnell Cleansers*, all of which are specially compounded to work in scrubbing machines: *Finola Scouring Powder*, for heavy duty scrubbing of smooth, hard surface floors and some wood floors . . . *Solar Soap Powder*, for use wherever a good *soap* powder is required . . . *Finnell Rubber Cleaner* . . . *Century Scouring Powder*, a mild abrasive cleanser . . . and *Asesco Solvent Cleanser* and Water Softener.

For consultation or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1901 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

IF YOU NEED NEW SCRUBBING EQUIPMENT . . . investigate the advantages of a Job-Fitted Finnell.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

SANDOZ PRESENTS *The color achievement of the month*

Rhapsody in Red BY VERNEY

Verney, one of the newer names to weave itself into the fabric of America's style consciousness, through outstanding promotions of "fabric compositions", demonstrates its fine talent in Evensong.

Reminiscent of the "romantic school" in music, Evensong is an all-synthetic faille-type fabric of very fine rib. It was selected for this classic evening gown by one of America's best-known designers.

Selection of Sandoz to be among its suppliers helps protect the reputation for good taste on which Verney Mills rode so rapidly to leadership. From Sandoz, Verney obtains colors that not only match the mood of the fashion season, but also are technically dependable.

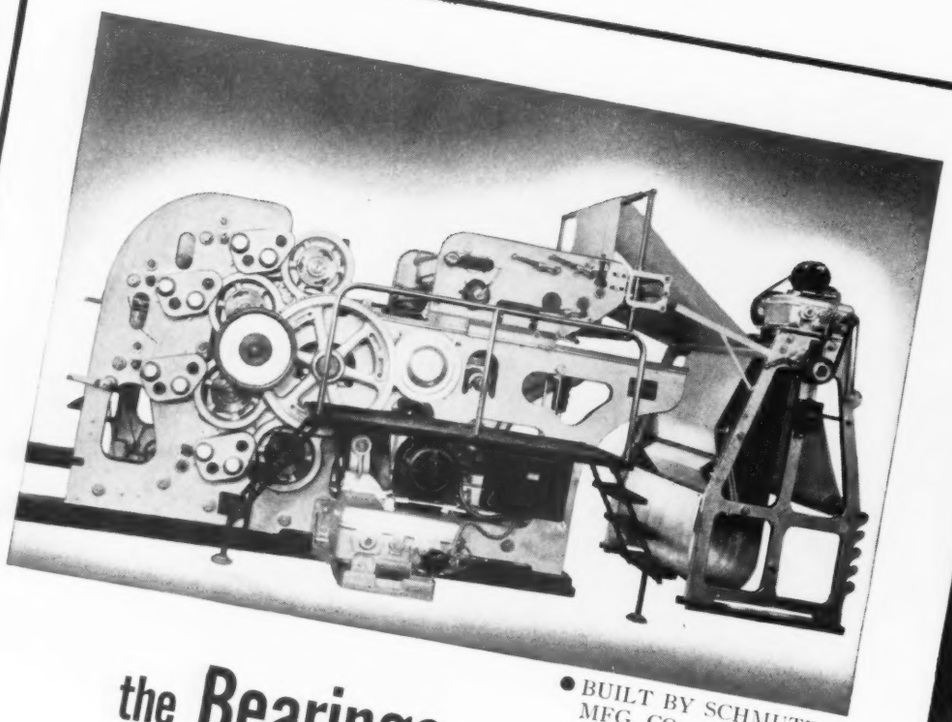
Sandoz' policy of *thinking ahead with textiles* means you, too, can expect from Sandoz maximum assurance of color-rightness plus benefit of the latest technical advancements. A recent typical advance is Pyrazol Fast Blue FLL . . . a new blue that possesses outstanding fastness to light. It is especially suitable for rayons and cottons and maintains its good light fastness *after* the urea formaldehyde treatment.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are located in New York, Boston, Philadelphia, Los Angeles, Charlotte, Toronto, where stocks in wide range are carried. Other branches in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

DETROIT PUBLIC LIBRARY

SAND *thinks ahead with textiles* S SANDOZ



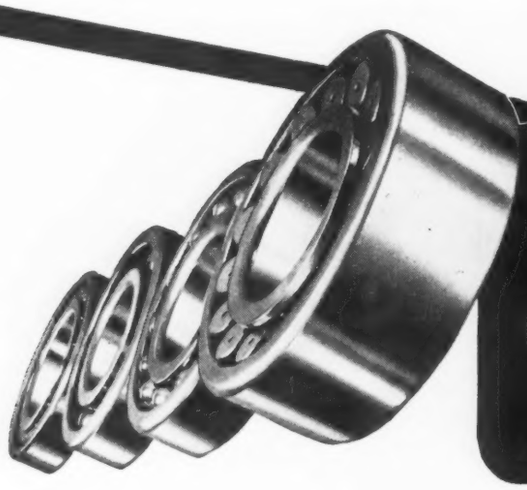
• BUILT BY SCHMUTZ MFG. CO., INC.

the Bearings that help print cloth bags!

When you read the inscription on a cloth sack of sugar or flour or on a bushel burlap bag of onions or potatoes, you probably give little thought to the machines that put it there. So we'll tell you about this new Four-Color Automatic Cut, Print and Fold Machine that makes and prints bags from the lightest cotton cloth to the heaviest burlap. Its inking rollers depend upon SKF Bearings for free running at all times and for the prevention of dragging over printing plates which causes smudging and offsetting of printed bags. Its inking mechanism runs entirely upon SKF Ball Bearings, too. A machine that's SKF-equipped is a machine that's built to do the job *right.*

5949

SKF INDUSTRIES, INC.
Front St. & Erie Ave., Phila. 34, Pa.



SKF
Puts the RIGHT BEARING in the RIGHT PLACE

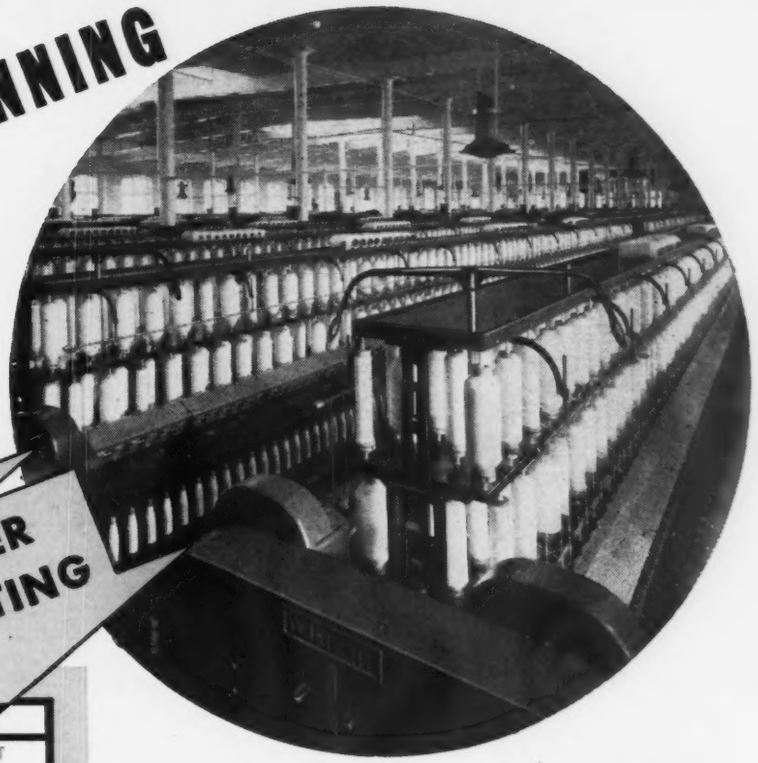
WHITIN LONG DRAFT SPINNING

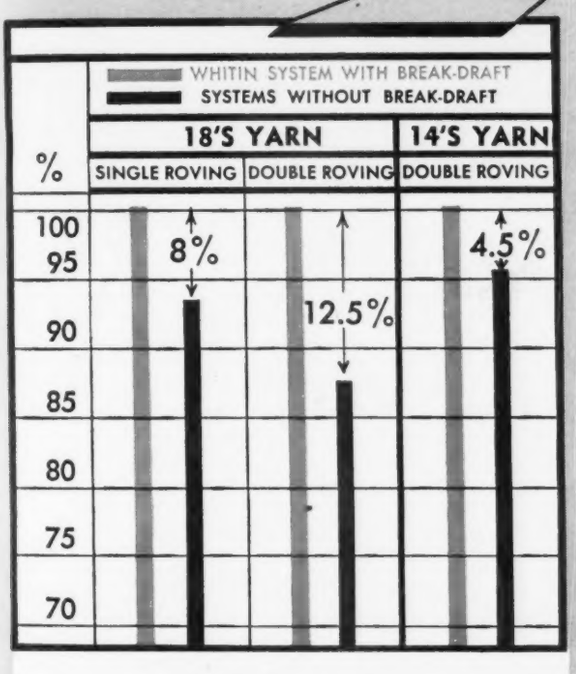
means

LOWER END BREAKAGE

HIGHER BREAKING STRENGTH

BETTER DRAFTING





THIS TELLS THE STORY

This graph shows the results of but a few of many tests conducted by a large mill, on an impartial basis, to determine, for their own use, the benefits to be derived from the use of break draft. In all cases the results were the same — *break-draft proved definitely beneficial.*

...and actual Mill Tests *PROVE IT!*

There has been made available to us the results of a recent and extensive series of mill tests on the important subject of "break-draft" on spinning.

Conducted on an impartial basis under actual mill conditions by a very large and important Southern mill, these findings serve to confirm the results of many similar tests made by our own Research Dept.

We feel these mill tests are conclusive proof of the value of break-draft to yarn quality.

Whitin **MACHINE WORKS**

WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. ATLANTA, GA.

Experience shows *better* Loom-Performance where Parts-Accuracy is left *undisturbed*

The master mechanic of a leading New England mill has said before . . . *and now he says it again* . . . "the quality of workmanship on the C-6 Loom is such that my department leaves the parts alone."

His experience (which is shared by mills all over the country) proves to him that the most efficient, most economical of any loom parts that can be bought—*or made*—are those supplied by the Loom Works.

For there's much more to making a loom part than making it to a certain shape or weight. C&K makes every loom part not as an item in itself . . . but as an interrelated part of the entire mechanism. And into this making goes long experience in design and *metallurgy*, experience that has been gained the hard way—*the right way*—through intimate knowledge of the performance of a loom as *the sum of ALL its parts.*

That's why mills like this . . . which depend only on *C&K Certified Loom Parts* . . . are able to show a lower cost for parts, a lower loss from waste and malfunction, than mills which make their own parts-repairs and alterations, or manufacture their own replacement parts entirely. There are many reasons for this, but mainly there are six, which can be summed up as follows:

Every Part made by C&K for any C&K Loom has answered "YES" to one *or more* of these questions:

1. Does it increase Speed of Operation?
2. Does it increase Continuity of Operation?
3. Does it decrease the Work of the Operator?
4. Does it decrease Cost of Maintenance?
5. Does it improve Quality of Fabric?
6. Does it improve Appearance or Utility?

The *only parts* that are made to measure up to this yardstick are *Certified C&K Parts.* And these are the *only parts* that give you lowest cost and top performance on C&K Looms.

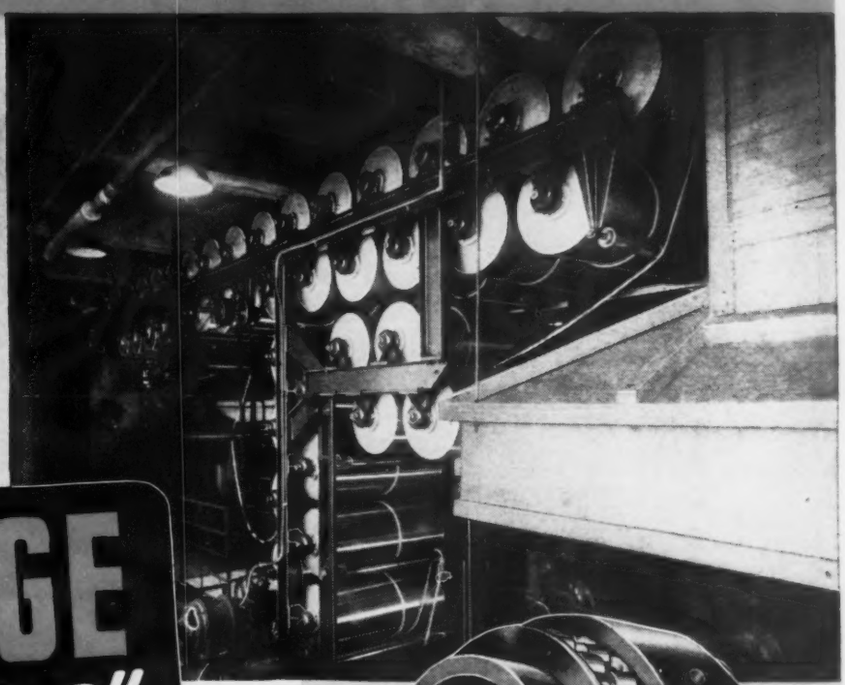
Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.
PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co.
Pawtucket, R.I.

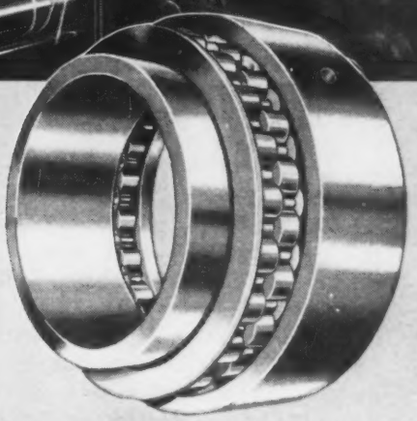
between Today's Knowledge . . a and Tomorrow's Looms

Beating HEAT · HUMIDITY · FRICTION
in Morrison Textile Dryers

● Eighty Orange Staggered Roller Bearings are installed in this Morrison 40-Can Dryer —two bearings to a can. Each can contains 15 lbs. steam pressure—the surrounding atmosphere is moisture-laden due to drying cloth. Despite this high operating heat and humidity, the Morrison Machine Company reports great satisfaction with the trouble-free operation of these bearings after several years continuous service.

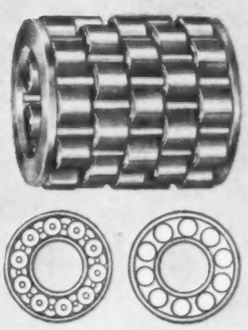


ORANGE "STAGGERED" ROLLER BEARINGS



WHILE Orange Staggered Roller Bearings are performing an unusual job in the above application, they are most widely used for their great load carrying capacity in heavy operations and their extremely smooth running in precision operations.

The unique staggered design distributes the load over many short rolls instead of a few full length rolls. As a result, Orange Staggered Roller Bearings do the work of larger size conventional bearings and stand up longer under severe running conditions. Skewing of rollers is minimized due to ease of alignment and adjustment in the raceway load area. Even running and trouble-free operation are assured. Made in a full range of standard *interchangeable* sizes. Special sizes made to order. Engineering Data Book sent upon request.



Shown are end views of an Orange Staggered Roller Bearing and a conventional roller bearing. Note how staggered roller design provides a multiplicity of contact points within the loaded zone.

ORANGE ROLLER BEARING CO., INC.
560 Main St., Orange, N. J.

SEND FOR ENGINEERING DATA TODAY

T.W.

ORANGE ROLLER BEARING CO., INC.,
560 MAIN ST., ORANGE, N. J.

Please Send Me Your Roller Bearing Data Book

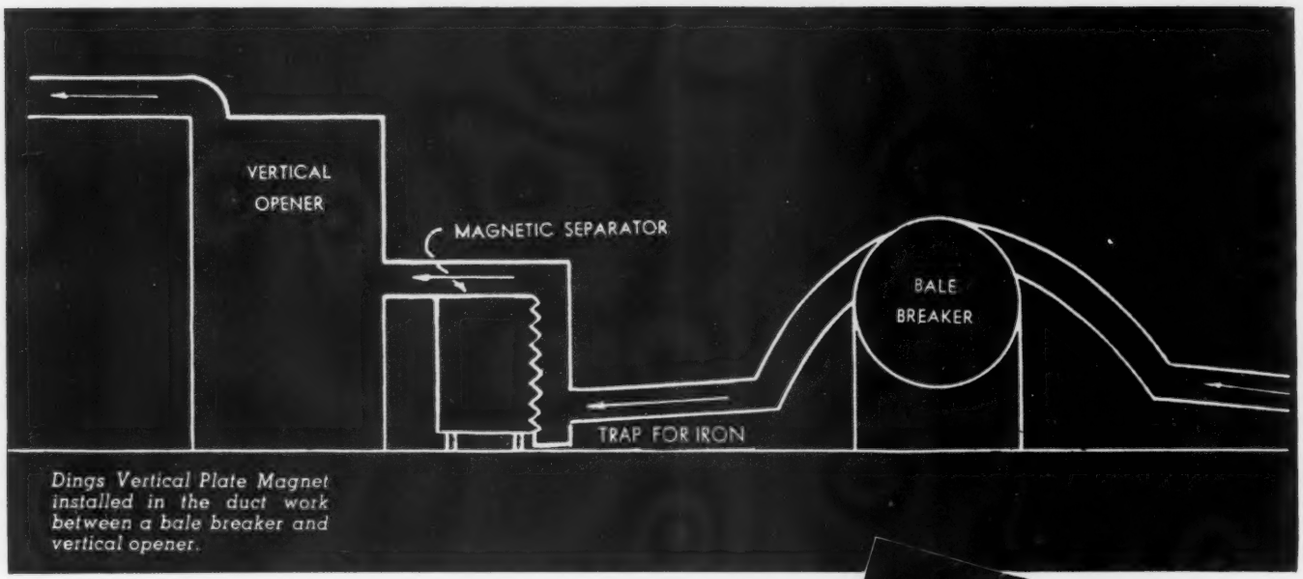
Name.....Title.....

Company.....

Address.....

City.....State.....

DINGS *textile magnets are easy to install*



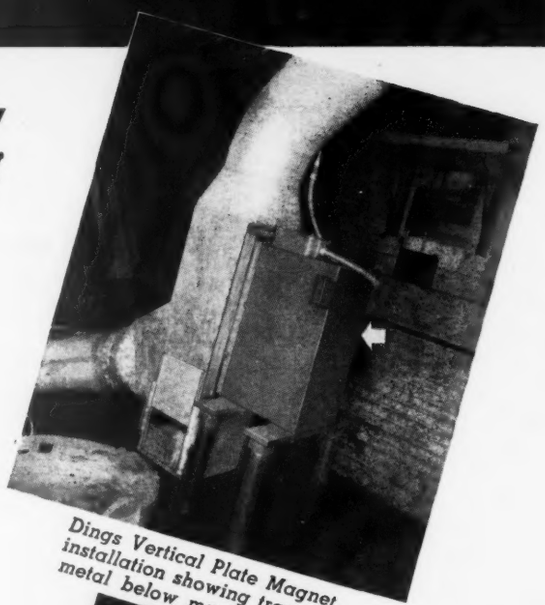
Dings Vertical Plate Magnet installed in the duct work between a bale breaker and vertical opener.

For protection from tramp iron, fires and damage to machinery

● Dings Textile Magnets are available for many simple installations like that shown in the diagram above. These units are highly recommended by insurance companies for removing dangerous tramp iron and their need is apparent from the following underwriter figures: *76% of opener-picker fires are caused by foreign substances* (mostly tramp iron). Many Dings Textile Magnet installations have the approval of the Associated Factory Mutual Fire Insurance Companies.

Dings Textile Magnets have a capacity of 1200 to 1800 pounds of cotton per hour, are 8 to 10 times more powerful and have an effective range of about 20 times that of non-electric magnets. Operating cost is about 1c per hour and there are no moving parts — nothing to wear out. Corrugated bronze face prevents sparking and helps arrest tramp iron. When power is interrupted iron falls into trap for easy removal.

Dings Textile Magnets are available from stock without priorities. Write for full details today and ask for the name of a user near you so that an actual installation may be studied.



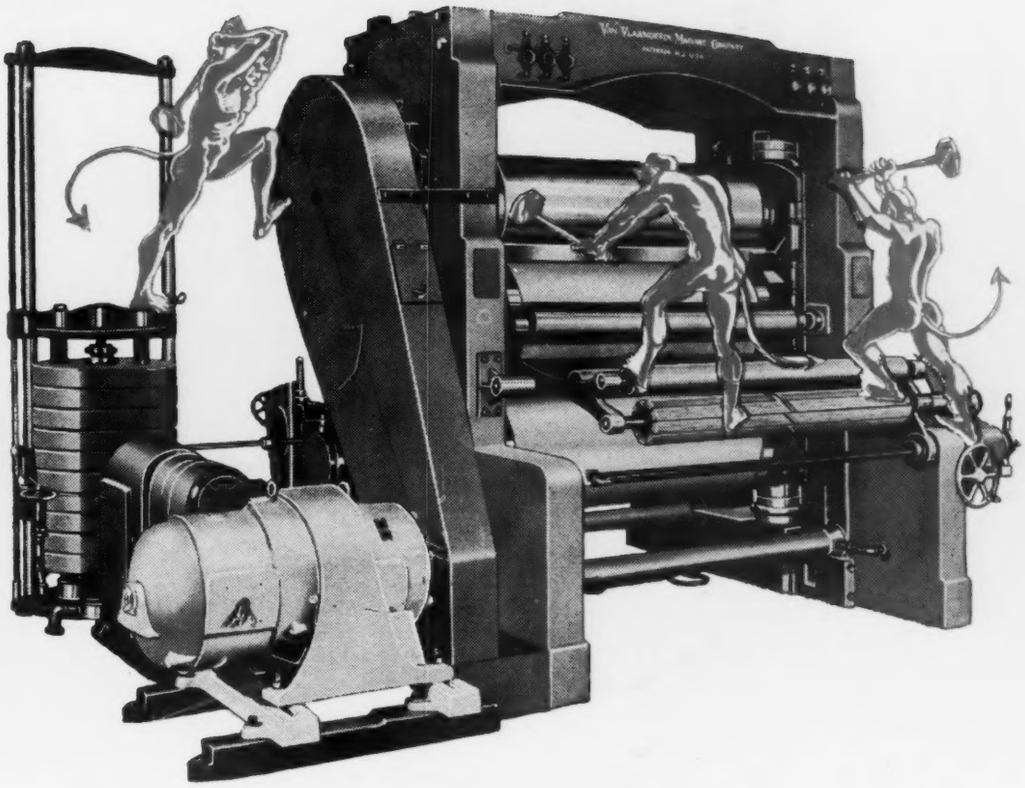
Dings Vertical Plate Magnet installation showing trap for metal below magnet.

FEATURES:

- Approval of Many Individual Installations by Associated Factory Mutual Fire Insurance Companies
- Simple to install
- Low current consumption
- Nothing to wear out
- High capacity—high intensity
- Non-magnetic, corrugated face
- Easy tramp iron disposal
- Available from stock—no priorities

Dings MAGNETIC SEPARATION HIGH INTENSITY

DINGS MAGNETIC SEPARATOR COMPANY
540 E. Smith St., Milwaukee 7, Wis.



IT CAN TAKE IT

To meet the varying demands for modern fabrics, Van Vlaanderen manufactures hydraulic calenders in several models with a number of roll combinations and delivering various pressures.

Van Vlaanderen Calenders, including the 60 Ton, Three Roll Machine illustrated, afford a real saving in power. All rolls are mounted in anti-friction spherical roller bearings, lubricated individually by filtered, cooled, continually circulating oil which is controlled by adjustable sight feed regulators. The 22 h.p. motor of the 60 Ton Calender drives the machine at 70 yards a minute.

The top roll is 13" in diameter, bottom roll is 18"; both rolls are made of chilled iron, the face of which is turned, ground and polished. (On the 80 Ton Calender the top roll is 16", the bottom roll 20".) Both rolls permit heating with steam. The intermediate roll is 22" in diameter, made of pressed cotton for heavy pressures or wool felt paper for lighter duty.

Pressure is applied rapidly and equally to the rolls by an oil hydraulic system consisting of a three plunger pump and a large capacity accumulator. No removable weights are used. Adjustment is simple and quick by a simple set of the weight lever. Pressure safety release and pump start and stop controls are conveniently placed on the accumulator.

To meet modern conditions modern equipment will be needed. Write for full information on Van Vlaanderen Calenders. Standard widths: 50", 55", 60". Other widths on order.

VAN VLAANDEREN MACHINE COMPANY
370 STRAIGHT STREET, PATERSON, 3, NEW JERSEY

World's largest manufacturer of machinery for processing modern fabrics

"TAKE A STITCH IN TIME . . ."

USE *Ashworth*

CARD SURVEYS

★ Don't wait until your cards break down, or until worn out or damaged wire in your cylinders, flats or lickerins causes poor work. Such delay results in unnecessary waste and loss of production. "Take a stitch in time"; have an Ashworth engineer inspect your cards regularly. Using Ashworth surveys, you can budget your card repair work and schedule it so that it will minimize interference with production.

★ And as always Ashworth means card clothing satisfaction, for its 3 factories, 6 repair shops and 7 distributing points assure an uninterrupted supply, prompt repairs and ready availability.

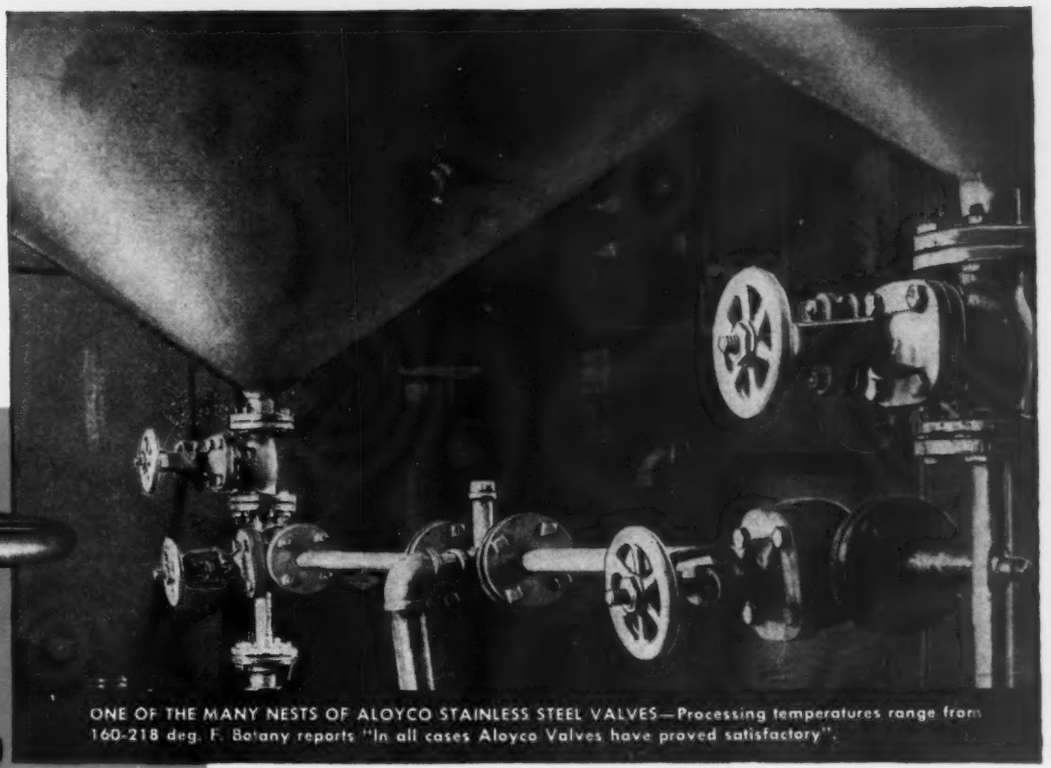
ASHWORTH BROS., INC., Woolen Div., AMERICAN CARD CLOTHING CO.

FALL RIVER *†‡ WORCESTER *‡ PHILADELPHIA *†‡ CHARLOTTE †‡ GREENVILLE †‡
ATLANTA †‡ DALLAS †‡ (Textile Supply Co.)

**Factory • †Repair Shop • ‡Distributing Point*

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.

ASHWORTH CARD CLOTHING



ONE OF THE MANY NESTS OF ALOYCO STAINLESS STEEL VALVES—Processing temperatures range from 160-218 deg. F. Botany reports "In all cases Aloyco Valves have proved satisfactory".

LONG VALVE LIFE

Without Stain

AT BOTANY WORSTED MILLS LANOLIN PLANT

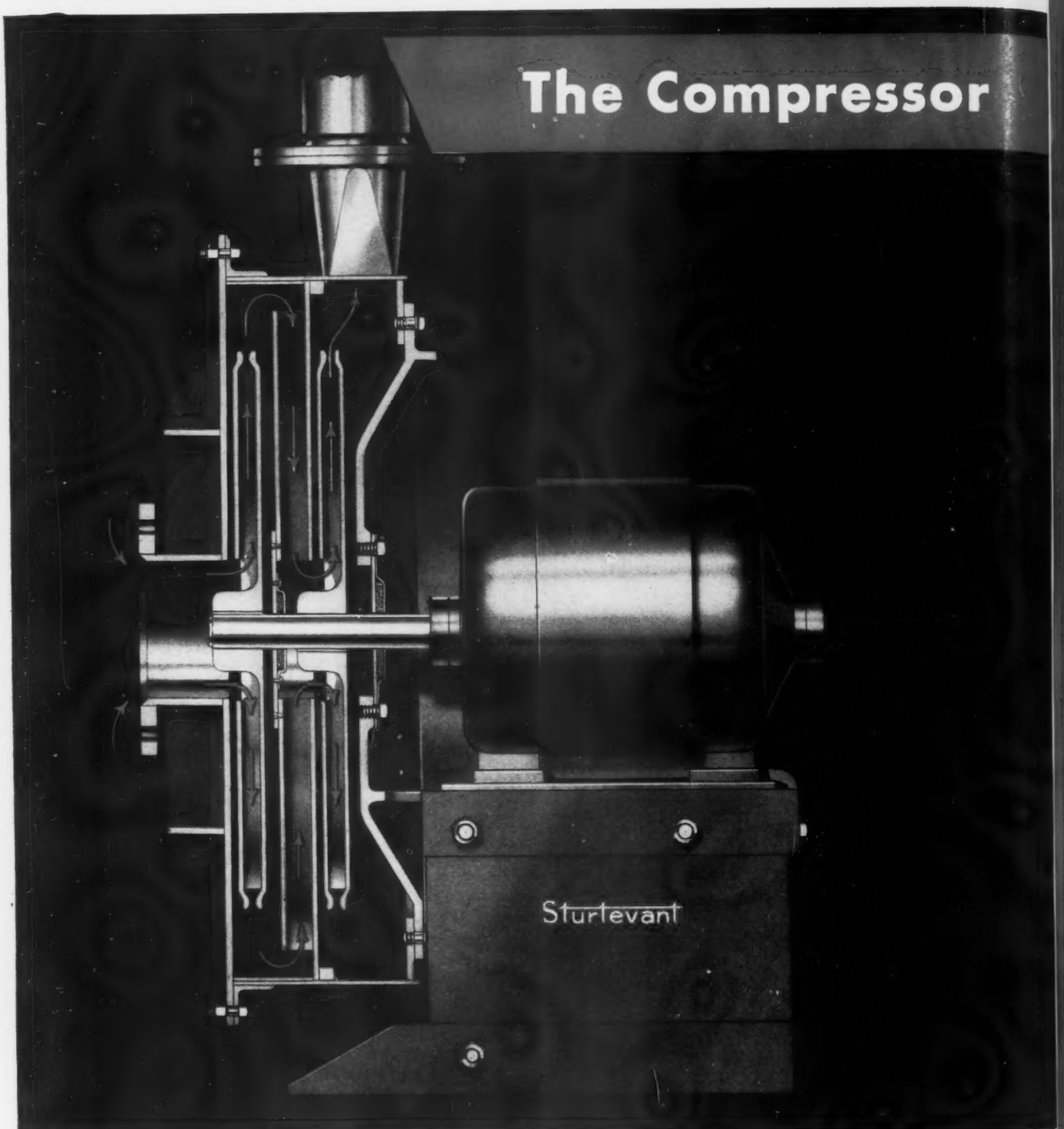
Lanolin, ingredient of beauty aids, must be free of metallic contamination. Its processing, however, involves the use of such corrosives as caustic soda, alcohol and hot acids. To prevent stain, Botany adopted corrosion resistant Aloyco Valves—and reduced valve repairs and replacements. You, too, can insure product saleability and diminish maintenance costs by installing Aloyco Stainless Steel Valves. Write for data book.

NO. 111 GATE
LEADER OF CORROSION RESISTANT VALVES

Has precision construction, superfine machine finished seating surfaces and unique design. Non-fouling double disc wedge provides drop-tight closure necessary in corrosives handling. Free to rotate, wears evenly. Easily repaired without special fixtures. Available in 18-8S, 18-8SMo, the higher Chrome-Nickel series, Aloyco 20, Worthite, Hastelloy, Monel and Pure Nickel.

Alloy Steel Products Co., Inc.
1304 West Elizabeth Ave. Linden, N. J.

ALOYCO
Stainless Steel
VALVES and FITTINGS
GATE VALVES • GLOBE VALVES
Y VALVES • CHECK VALVES
LEVER THROTTLE GATE VALVES
TANK VALVES • SCREWED FITTINGS
FLANGED FITTINGS
GAUGE GLASS FITTINGS



STURTEVANT GIVES YOU THESE 7 IMPORTANT ADVANTAGES

★ **CONSTANT PRESSURE** over a wide range of air volumes.

★ **DIRECT POWER SAVINGS** because power input decreases in proportion to the volume of air delivered.

★ **SIMPLE, STURDY DESIGN.** Overhung wheel eliminates misalignment troubles; heavy steel plate construction insures long life.

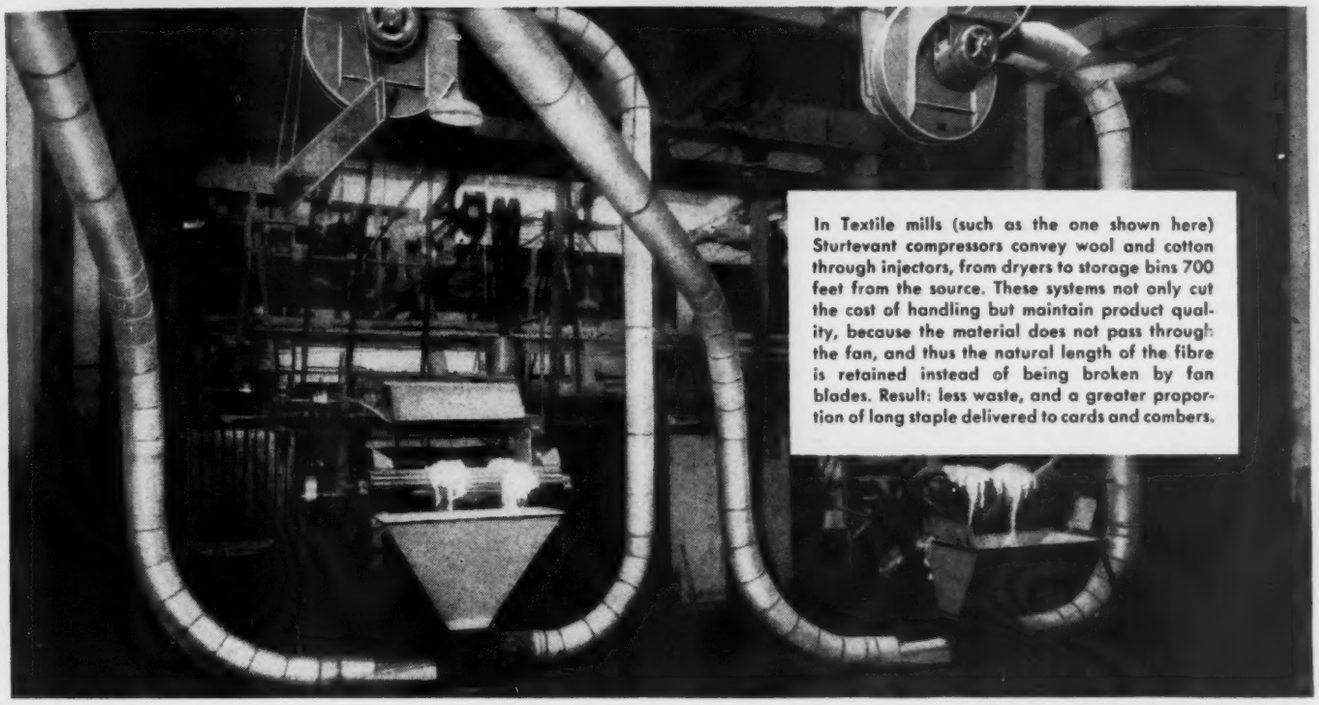
★ **LIFE-TIME EFFICIENCY** because only parts in contact are motor bearings; no close clearances.

★ **MINIMUM MAINTENANCE;** only attention required is lubrication of motor bearings two or three times a year.

★ **QUIET OPERATION** with equal peripheral speeds make Sturtevant Compressors the quietest units of their kind.

★ **WIDE RANGE OF SIZES;** Design 9 is made in 4 types, over 150 sizes, ½ to 3 lbs. pressure, volumes up to 5,500 cfm. Other designs up to 5 lbs. pressure and to 50,000 cfm.

that makes AIR pay you a profit



In Textile mills (such as the one shown here) Sturtevant compressors convey wool and cotton through injectors, from dryers to storage bins 700 feet from the source. These systems not only cut the cost of handling but maintain product quality, because the material does not pass through the fan, and thus the natural length of the fibre is retained instead of being broken by fan blades. Result: less waste, and a greater proportion of long staple delivered to cards and combers.

In conveying, drying, fume control and dozens of other applications, the Sturtevant Centrifugal Compressor is helping many industries to speed up production and to turn out a better finished product. Engineered to give quiet, vibrationless operation, the Design 9 Compressor delivers constant pressure over a wide range of volumes, requires no maintenance other than occasional lubrication, and yields important savings on power. For complete details, write for Catalog No. 386-2.

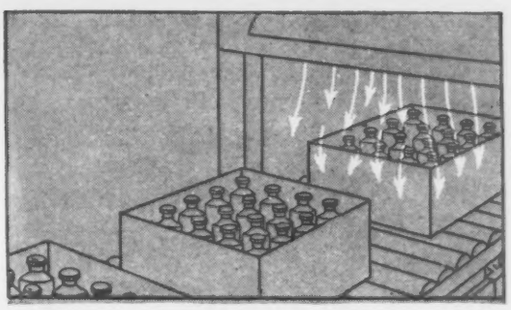
B. F. STURTEVANT COMPANY

Division of Westinghouse Electric

HYDE PARK, BOSTON 36 MASS.

Sturtevant

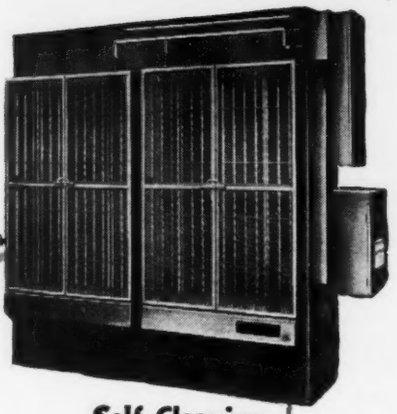
Puts Air to Work

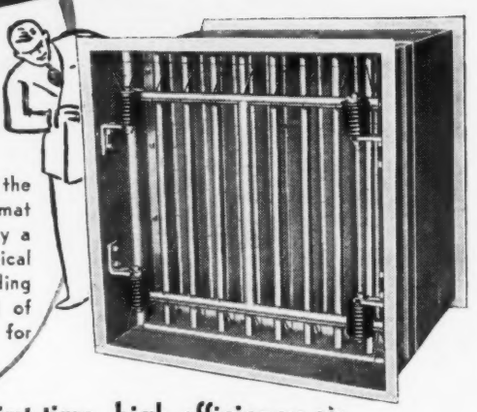


High velocity air jets perform the dual function of blowing off excess moisture and drying the metal containers shown above. The drying load is greatly reduced since surface moisture is eliminated mechanically rather than by the application of heat. Such systems are suitable for any continuous production line.

On large plating tanks where it is not practicable to install overhead hoods for fume control, this ingenious "push pull" air system has been developed. A thin screen of high pressure air is directed across the surface of the tank, pushing the fumes into an exhaust duct on the opposite side. This method prevents fumes or vapors from rising into the working area and calls for a greatly reduced flow of exhaust air, with consequent savings in piping expense, power consumption and heat loss.

for the first time . . .





The Cleanable
Electro · CELL

Sectional-type Electronic air filter with removable collector plate assemblies. This feature eliminates need for providing water, oil, compressed air and sewer connections at each installation. Spare collector plate assemblies can be set into place and service continued uninterrupted while dirty plates are being cleaned. Send for Bulletin No. 252.

Self-Cleaning
Electro · MATIC

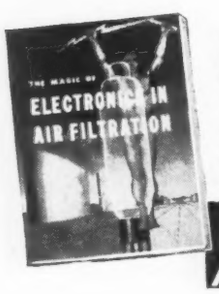
The completely automatic operation of this Electronic filter answers both the problem of removing the dust and smoke from the air, as well as the secondary problem of disposing of collected material. A continuous curtain of collector plates passes intermittently down the front of the filter and thru a viscous cleaning bath at the bottom. Send for Bulletin No. 250.

a complete line of Electronic air filters

Renewable Media
Electro · AIRMAT

This is the only Electronic dry filter on the market. Uses sheets of "charged" airmat paper which are renewed manually or by a mechanical loader. Combines mechanical filtration with Electronic cleaning providing continuous service even thru a period of power failure should it occur. Send for Bulletin No. 253.

• AAF offers, for the first time, high efficiency air cleaning in three types of Electronic filters to meet any requirement, either commercial or industrial, for *super-clean* air. For the interesting story behind the development of these filters which are the result of 10 years of reseach and experimentation send for the helpful booklet shown below.



THE MAGIC OF ELECTRONICS IN AIR FILTRATION will be sent free on request. Write for your copy today, there's no obligation.

AMERICAN AIR FILTER COMPANY, INC.
Incorporated
304 Central Avenue, Louisville 8, Kentucky
In Canada: Darling Brothers, Limited, Montreal, P. Q.

AAF **Electronic AIR FILTERS**
FOR EVERY COMMERCIAL AND INDUSTRIAL AIR CLEANING PROBLEM

CROUSE-HINDS

Plugs and Receptacles

The illustrations show a representative selection from the hundreds of different electrical plugs and receptacles that are listed in Crouse-Hinds CONDULET Catalog No. 2500. A full range of sizes — 10 amperes to 400 amperes, up to 600 volts A. C.

No. 5

of a series of advertisements which demonstrate that CROUSE-HINDS "complete line" means much more than just a range of sizes — there is a wide variety of highly specialized types in each classification.

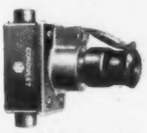
Type C Condulet with Double T Slot Receptacle

Type C Condulet with Receptacle

Type DXE Condulet with Twist Lock Receptacle

Type FS Condulet with Pilot Light, Switch and Receptacle

Type FS *Two-gang Tandem* Condulet with Switch and Receptacle


Type FSC Condulet with Type BRD Receptacle and Plug

Type BHMF Receptacle Condulet for Flush Mounting with Plug

Type BRME Receptacle Condulet

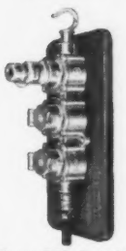
Type BRM Receptacle Condulet with Plug

Type FS Weatherproof Receptacle Conaulet with Locking Cover

Type FSC Receptacle Condulet with Three Receptacles and a Watertight Plug

Type FS Condulet with Type FAR Arktite Receptacle

Type PRB Receptacle Condulet with Five Receptacles


Type GSP Portable Receptacles with Plug *Three-Gang*

Type BR Extension Cable Connector Double Receptacle

Type BRC Extension Cable Connector Receptacle and Plug

Type ARE *Arktite* Receptacle

Type AEQ *Arktite* Receptacle *for Flush Mounting*

Type ARRC Condulet with *Arktite* Receptacle

Type BRW Watertight Double Receptacle Condulet with Plug *for Railroad Yards*

Type ARD Condulet with *Arktite* Receptacle

Type WMKS Interlocking Safety Switch and Receptacle

Type AJ Condulet with *Arktite* Receptacle

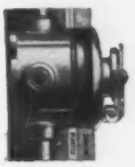
Type QEEH Delayed Action *Arktite* Receptacle

Type GST Condulet with Type BRG Receptacle and Plug

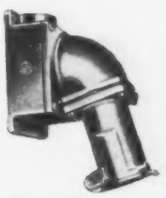
Type APC *Arktite* Extension Cable Connector

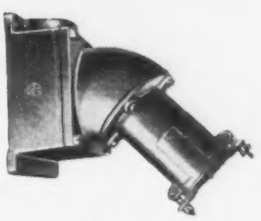
Type AREX *Arktite* Receptacle

Type APF Fusible *Arktite* Plug, Exploded View


Adjustable Type EHS Explosion-Proof Delayed Action Receptacle Condulet

Type AEQ *Arktite* Receptacle for Flush Mounting, *Two-gang*


Type AREA *Arktite* Receptacle


Type AREA *Arktite* Receptacle

Type FSQ Explosion-Proof Interlocking Receptacle and Switch

Type CES Explosion-Proof Delayed Action *Arktite* Receptacle

Type CPS Explosion-Proof Delayed Action *Arktite* Receptacle with Plug

Type CPS Explosion-Proof Delayed Action *Arktite* Receptacle, *Two-gang*

Type FSQC Explosion-Proof Interlocking Receptacle and Switch

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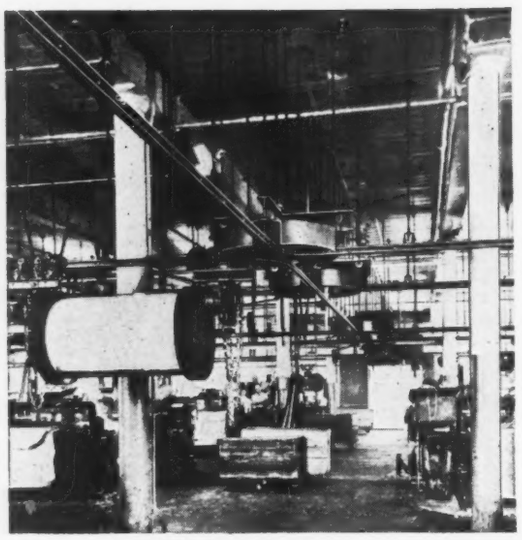

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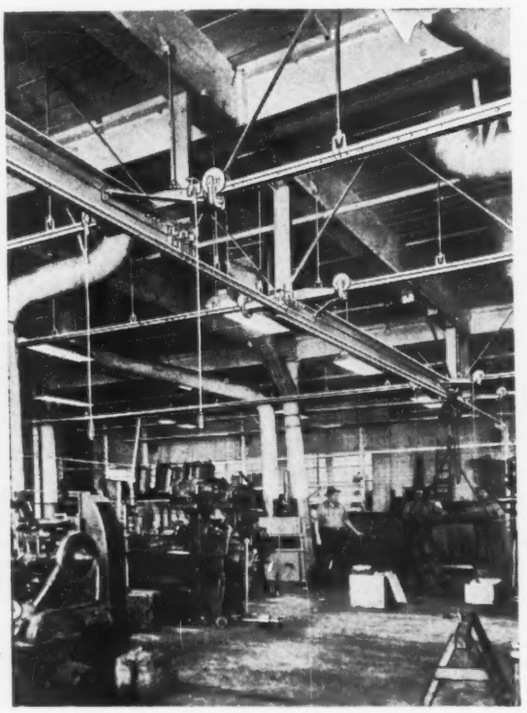
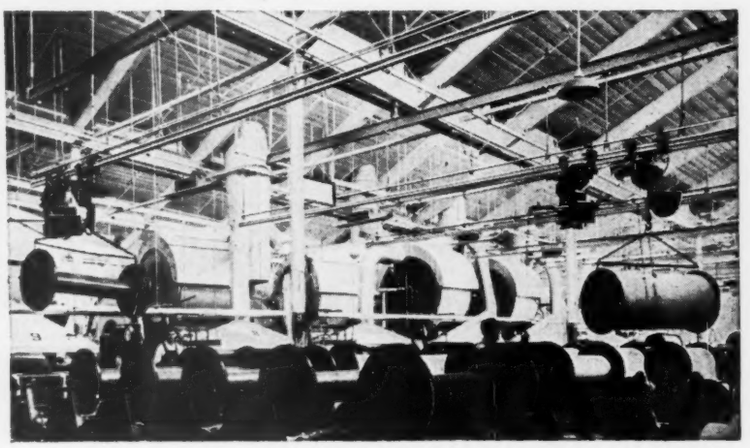


Simple hand-operated cranes aid in movment of loads in machine shop.



MonoTractors propel slasher beams into position for accurate spotting on creel.

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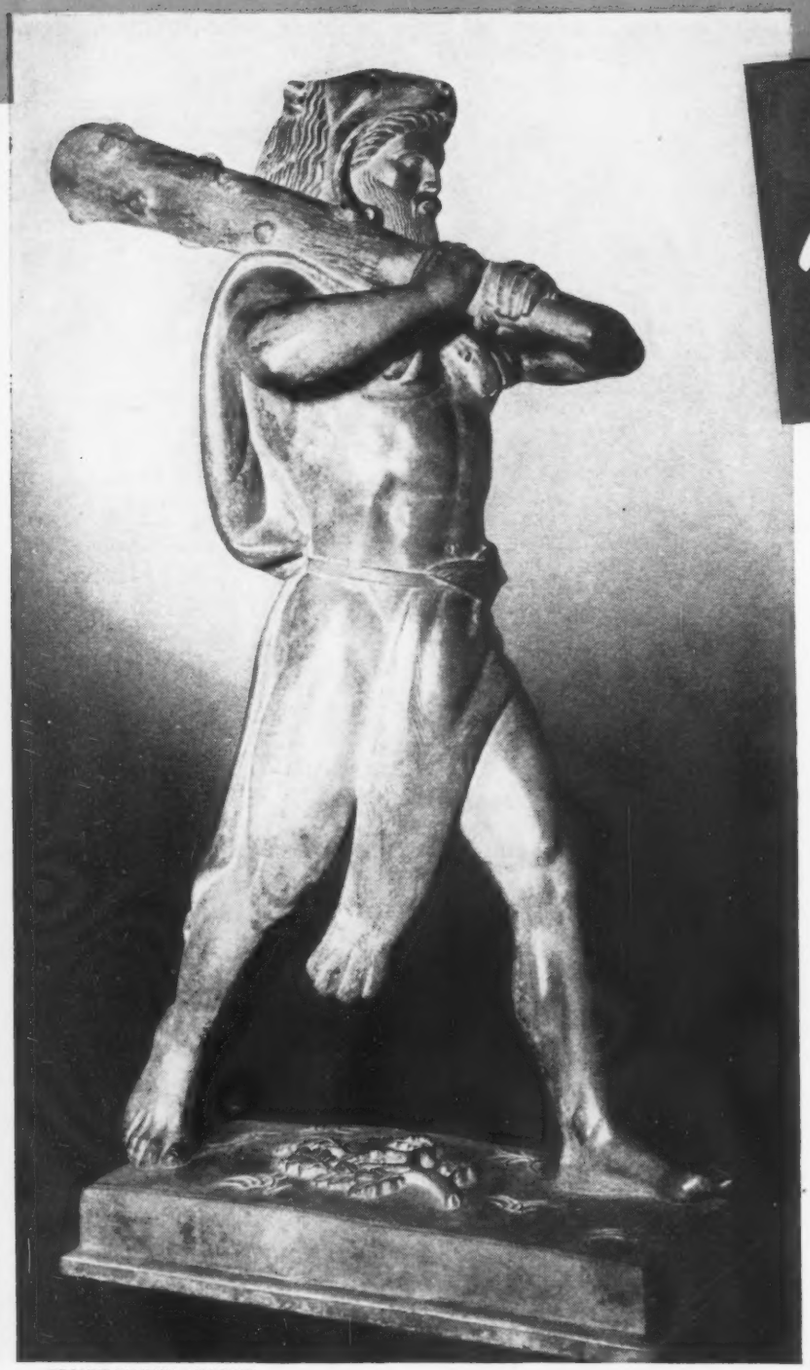

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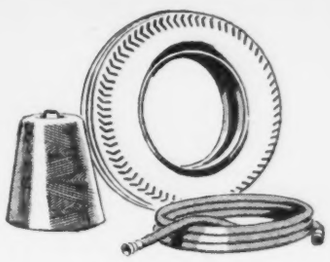

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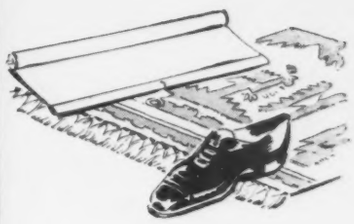
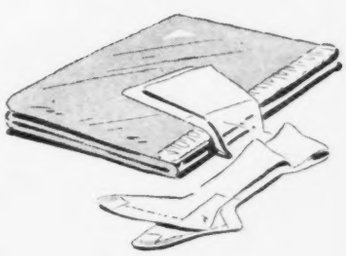
Basis for the toughest high-tenacity rayon for automobile tire cords and other industrial textiles.

Clorafin*...
Hercules low-cost chlorinated paraffin for flame- and water-resistant coatings for canvas and other textiles.



Flexalyn*...
An economical binder for corn and other starches for back-sizing carpets, shoe and tag cloth filling, window shades.



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Yarmor* 302-W pine oil is a low-cost wetting agent and penetrant used in wet processing all textile fibers.

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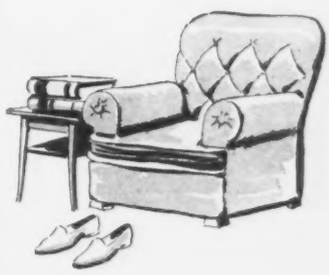
One of a series of solvents and plasticizers for textile chemicals. An excellent dispersant for pigments.



Nitrocellulose...
Hercules nitrocellulose and ethyl cellulose are the basis for rapid drying, durable, brilliant textile coatings.

Back of every Hercules development for the textile industry are Hercules vast research facilities. In this laboratory, extending over 37 acres, more than 600 workers strive constantly to improve materials and finished products.
Why not let them help you on your next problem?

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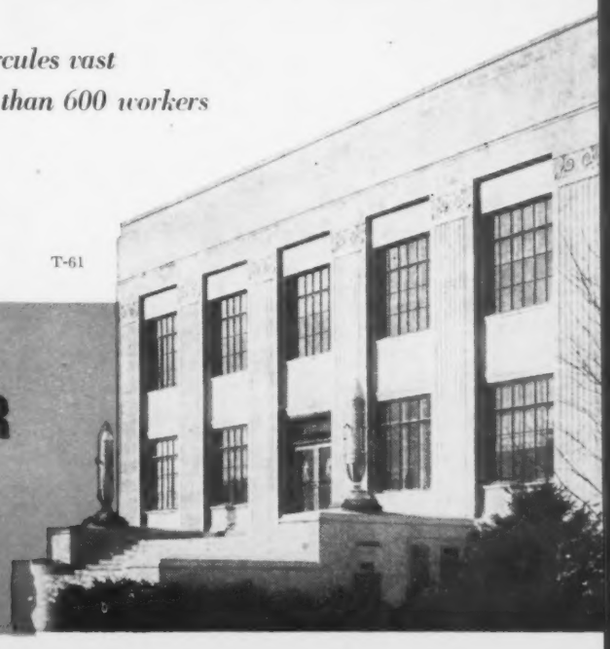

CHEMICAL MATERIALS FOR THE TEXTILE INDUSTRY

Anywhere in "Textile Territory"... there's a U S representative nearby

Wherever your mill is located – North, South, or Canada – it's not far from the headquarters of some representative of the U S Bobbin and Shuttle Company.

Each one of these men is well-equipped to bring you U S service at its best. Each one knows every field of textile production from long association – and can offer experienced advice on the use of U S products in any process.

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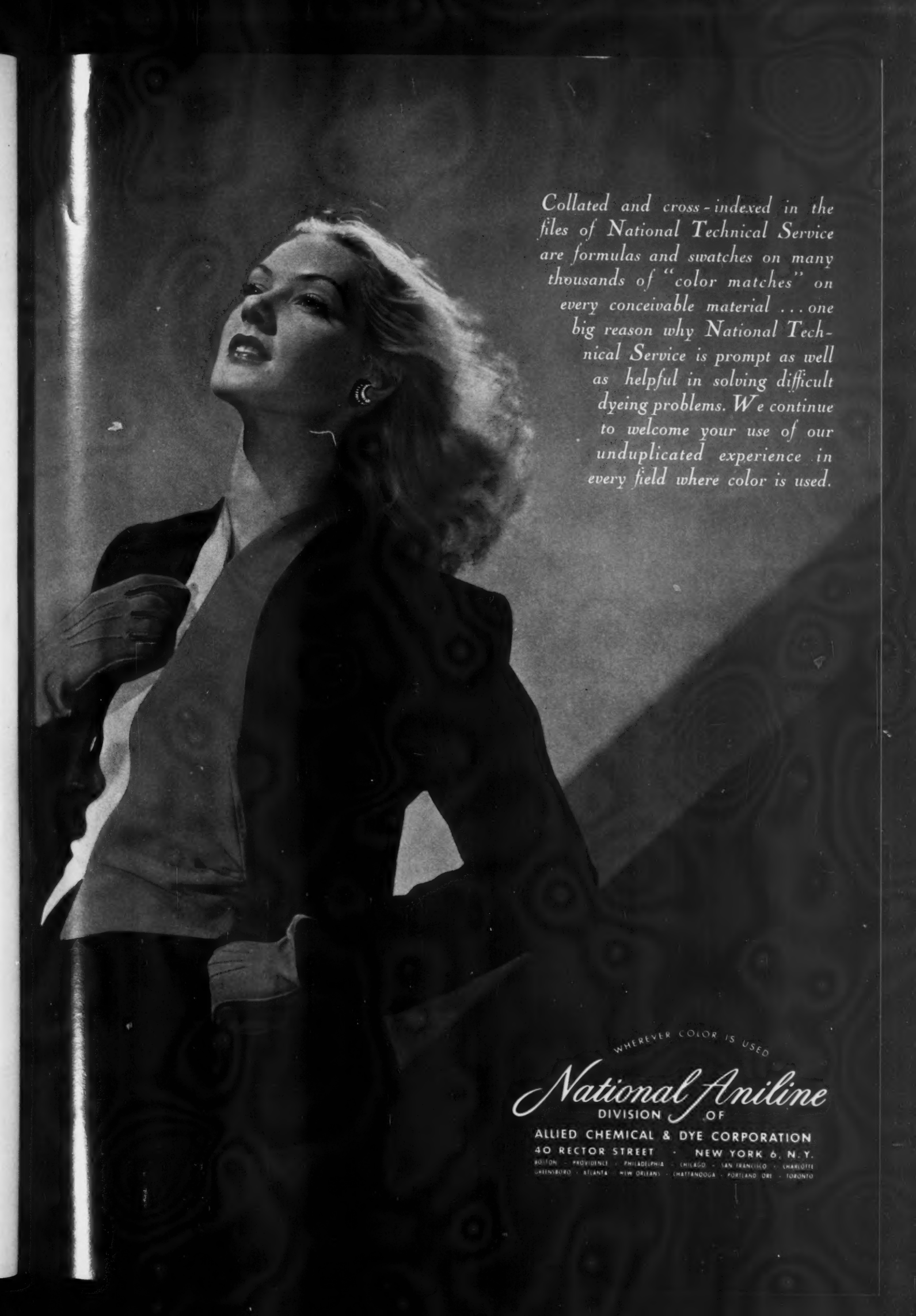
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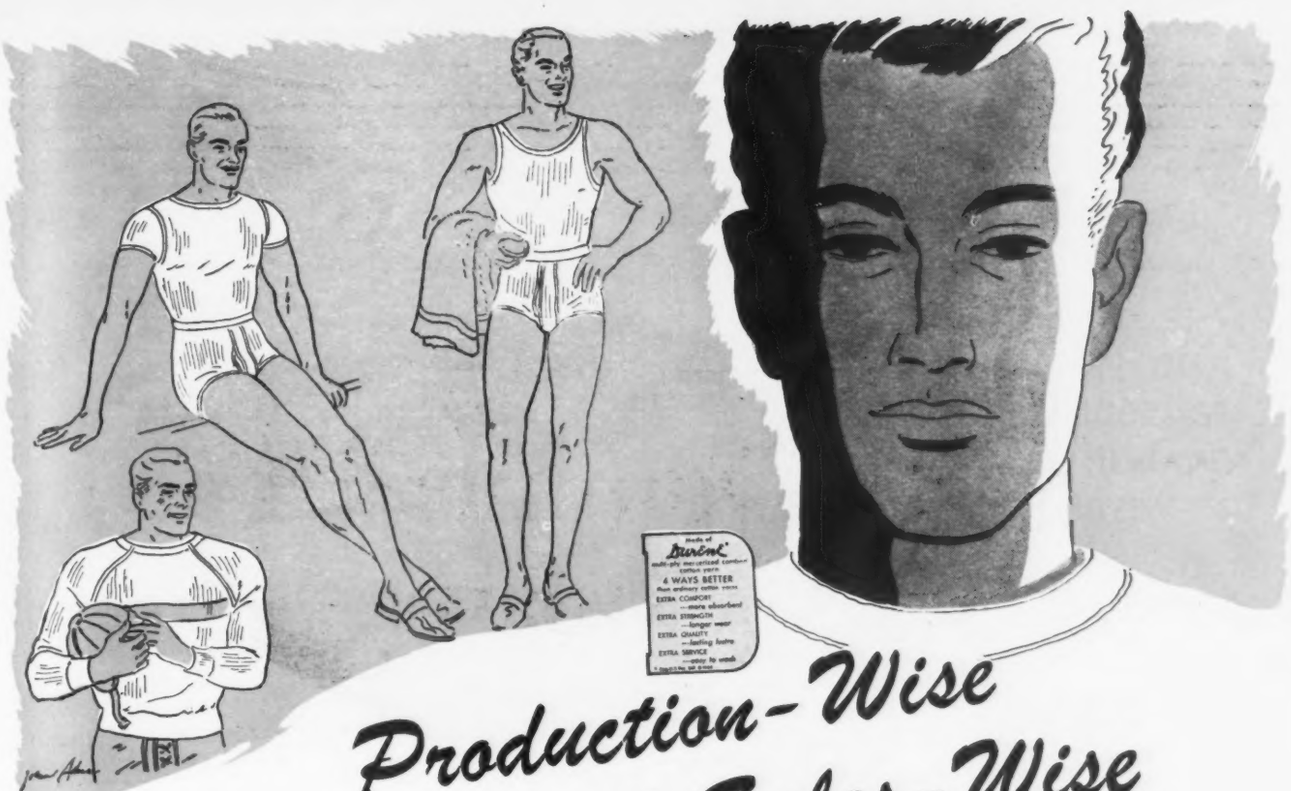

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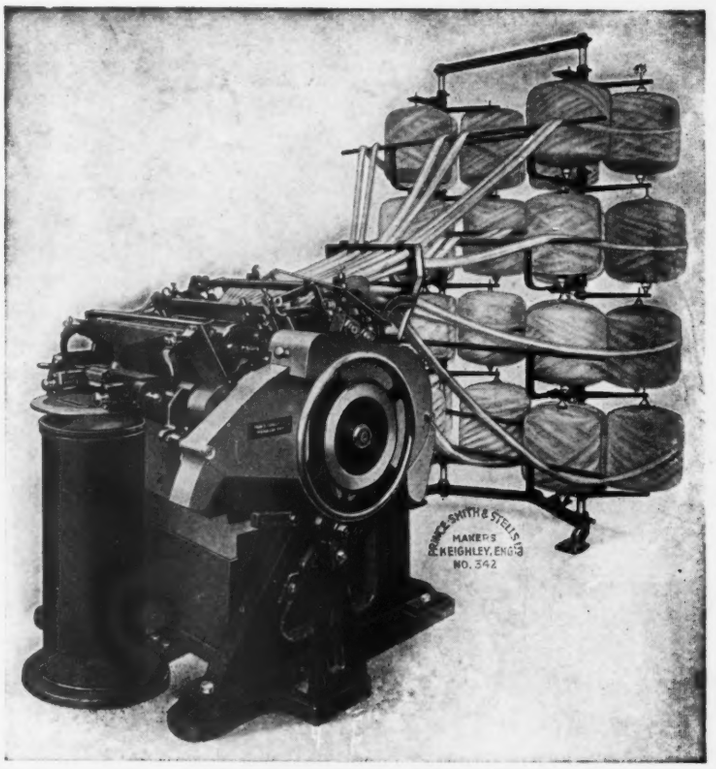

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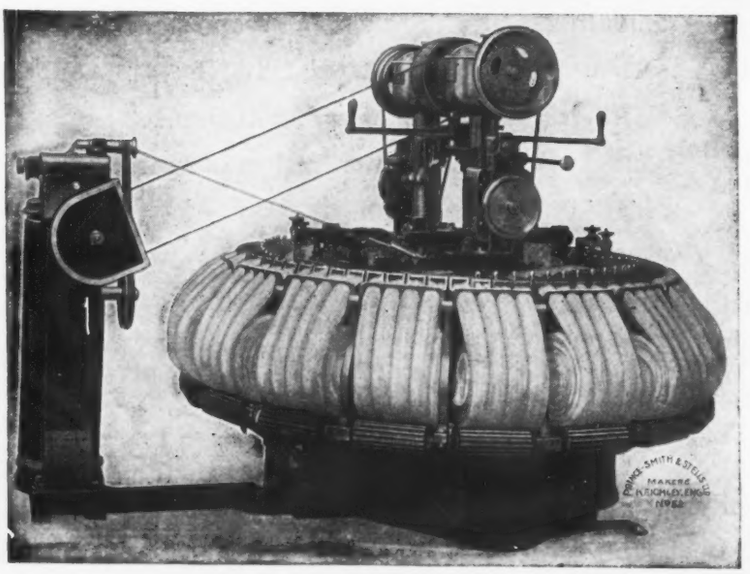

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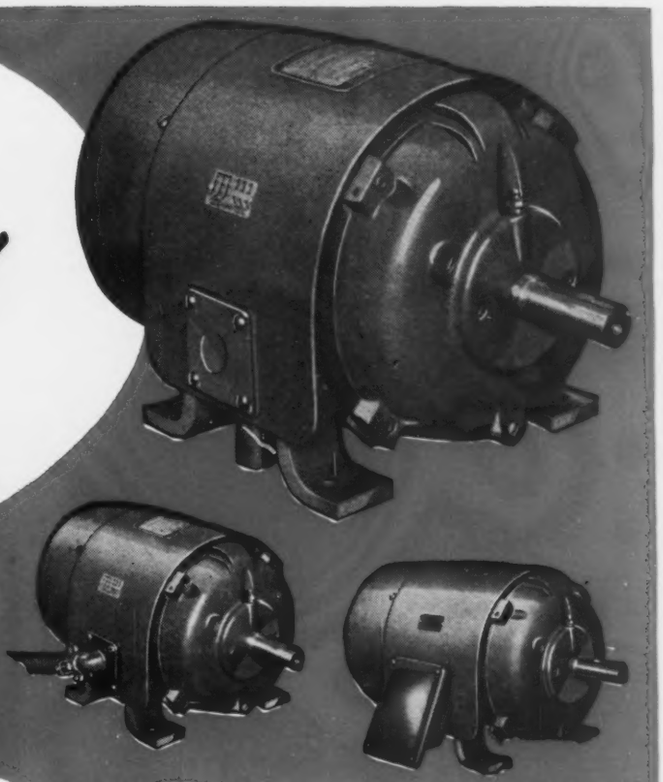
Eliminate Conduit Box

OR USE ANY WAY YOU CHOOSE..



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You can quickly make wiring connections to suit any type of machine mounting. Just see what you can do:

Completely eliminate external conduit box by tucking 220/440 leads into internal conduit box through either of two lead outlet arrangements

...or rotate external conduit box to any of *four different* positions

...or move box to opposite standard simply by removing rotor and turning stator 180 degrees.

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8 Balanced Design Features

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3. **Thirteen-step winding treatment,** for maximum stator protection.
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5. **Heavy shafts,** liberally designed for added strength.
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Superior Softness of Hand

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AEROTEX SOFTENER H is a substantive type softener *especially suited for use in conjunction with many of the synthetic resin finishing* processes because of its compatibility and permanence.

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It is highly efficient on cotton and rayon, filling a long-felt need for a softener of this type that enters into perfect combination with most of the permanent type synthetic resins. SOFTENER H produces a finish of superior smoothness and suppleness of handle which offers exceptional resistance to washing, dry-cleaning or discoloration.

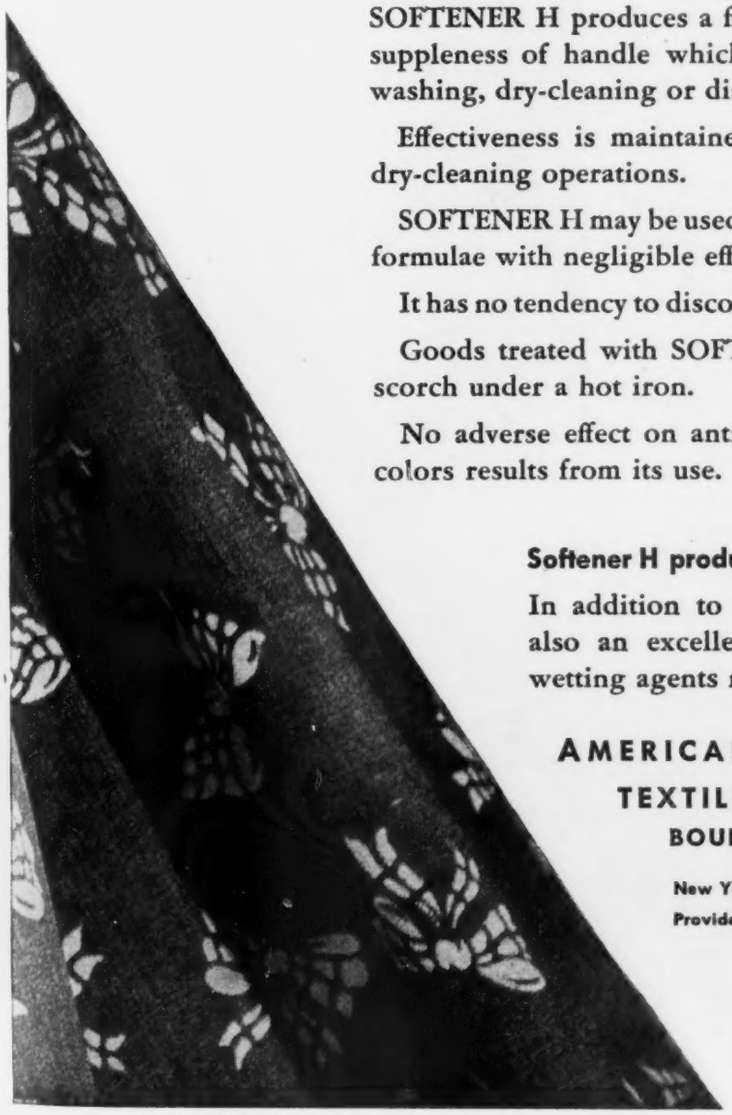
Effectiveness is maintained after repeated laundering and dry-cleaning operations.

SOFTENER H may be used as a softening agent in anti-crease formulae with negligible effect on crease-resistant properties.

It has no tendency to discolor white goods, or develop odors.

Goods treated with SOFTENER H show less tendency to scorch under a hot iron.

No adverse effect on anti-gas fading properties of acetate colors results from its use.



Softener H produces superior smoothness of hand

In addition to these qualities SOFTENER H is also an excellent wetting agent, and no other wetting agents need to be used with it.

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Impervious to moisture and mildew.
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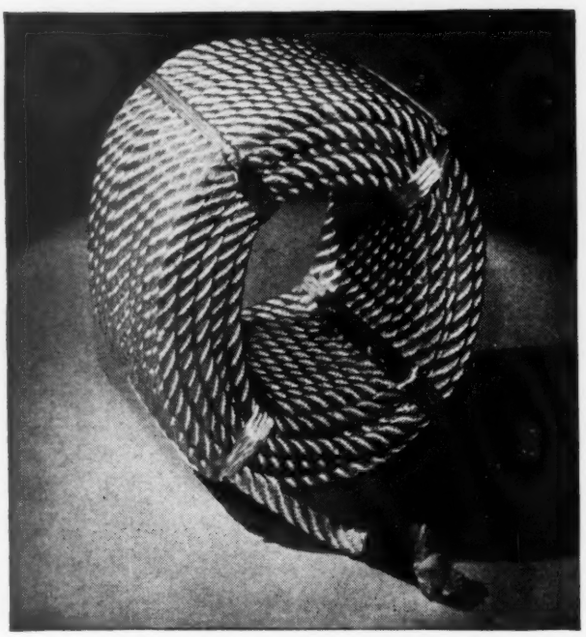

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TEXTILE MACHINERY
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Pick HOT WATER HEATERS

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WEST BEND, WISCONSIN, U. S. A.

BECAUSE a tremendous amount of hauling is eliminated with a Cleveland Tramrail system at one of their mills, the executives of Marshall Field & Co., Manufacturing Division, with main offices in Spray, N. C., are enthusiastic over their overhead materials handling equipment in this mill.

Cleveland Tramrail is used in many departments. It has been found especially advantageous for the handling of beams. Since it is desirable to keep 70 to 80 warp beams ahead of the slashers, considerable space is required for their storage. Cleveland Tramrail enables them to store the beams three high when space is lacking and thereby get more beams into a given area. Also any beam can be picked up and moved direct to slashers without moving other beams on the floor.

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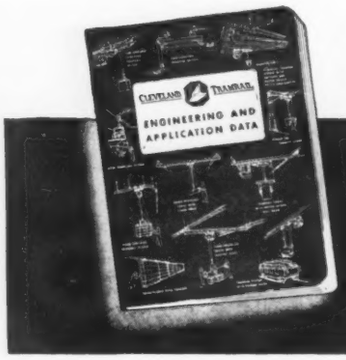
Cleveland Tramrail is aiding dozens of textile mills accelerate production, cut costs and better working conditions.



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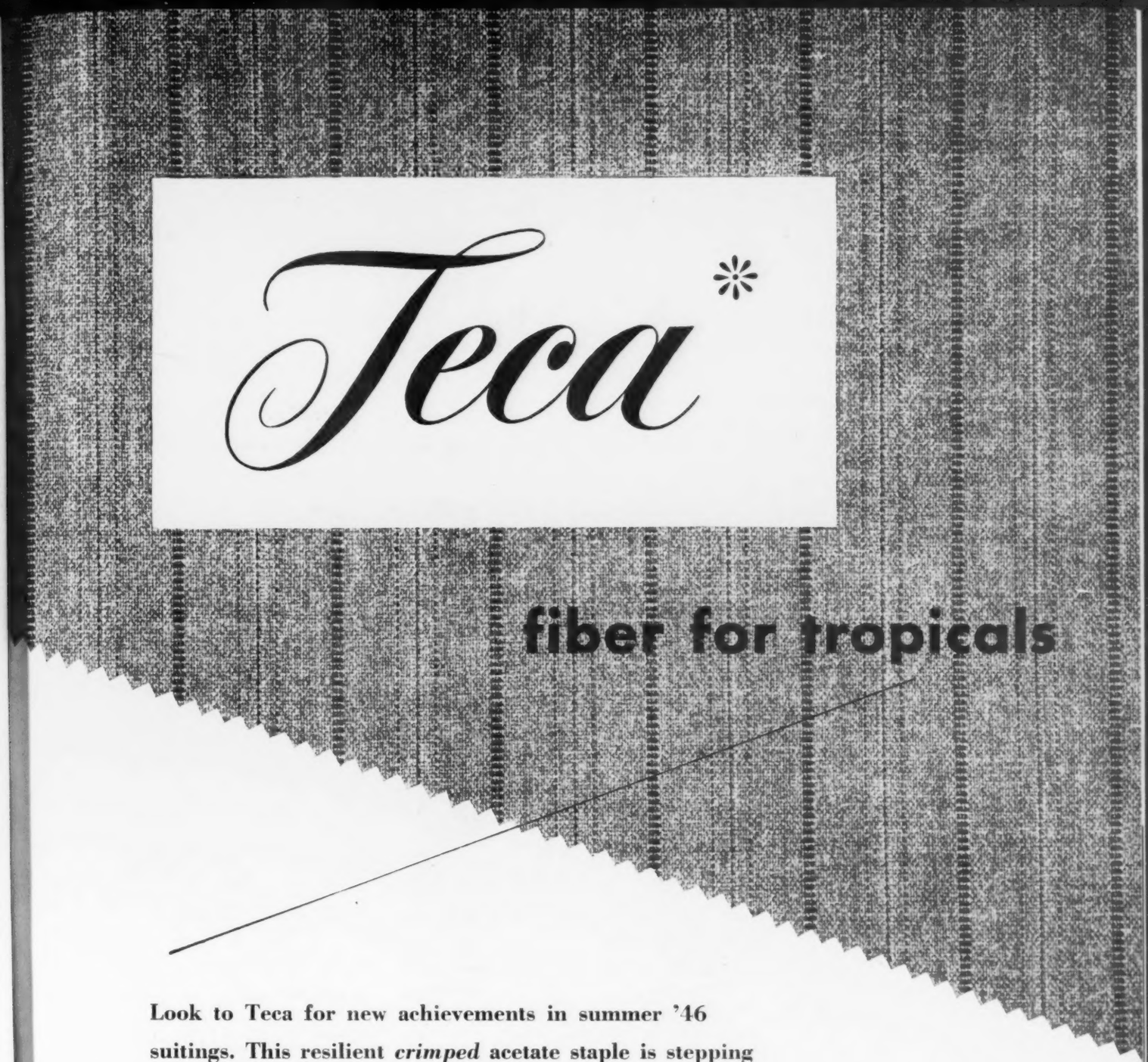
OVERHEAD MATERIALS HANDLING EQUIPMENT



Look to Teca for new achievements in summer '46 suitings. This resilient *crimped* acetate staple is stepping up spun rayon blends . . . improving their hand and shape-holding qualities . . . making them cooler, easy to clean . . . minimizing shrinkage by its controlling action on other fibers. The more Teca in a blend — famous-name suitings contain sixty percent — the more you can count on these characteristics to build satisfaction for spun rayon tropicals.

For further information about Teca consult A. M. Tenney Associates, 10 East 40th Street, New York 16, sales representatives for Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of the Eastman Kodak Co.

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One moment, please
The picture is changing!

Yes, the picture is changing in America's textile mills. Plants which turned out army blankets, cotton duck, machine gun belt webbing, and countless other wartime fabrics during the past four years are again producing peacetime goods.

Current demands for civilian fabrics are enormous . . . will doubtless continue to be heavy for years to come. The need for careful processing now, to keep pace with production demands and to guard against costly, time-wasting tie-ups and rejects, is mighty important.

Olate, through its efficiency and safety, helped smooth out processing problems in many, many war-rushed textile mills. You can depend upon Olate to deliver equally fine performance in your mill during the reconversion period ahead.

Procter & Gamble

Olate

safe and efficient for every textile soap usage!

These Olate Advantages Mean Better Processing

***Fast Dissolving*—resulting from Olate's low titer and thin flake form.**

***Fast Rinsing*—providing protection against odor development and fabric discoloration.**

***Fast Penetration*—fluid Olate solutions wet out fibers quickly, evenly thoroughly.**

***Safety*—Olate is a pure, neutral soap of uniform composition. Its efficient emulsifying and lubricating properties are coupled with exceptionally gentle cleansing action.**

The Quality of Boger and Crawford knitting yarn is guaranteed —the highest tribute we can pay it. Signed . . . . . .

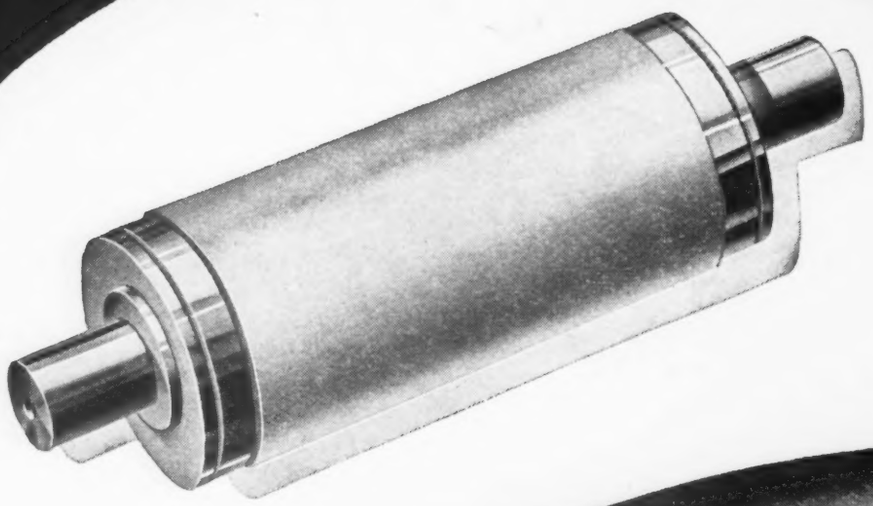
Frederick Boger

BOGER and CRAWFORD PHILADELPHIA, PA.

UTICA, N. Y. • BOGER CITY, N. C. • BOSTON, MASS. • CHICAGO, ILL.

PERKINS RESEARCH

keeps pace with INDUSTRIAL PROGRESS



PERKINS

CALENDER ROLLS

B. F. PERKINS & SONS, INC.

HOLYOKE · MASSACHUSETTS

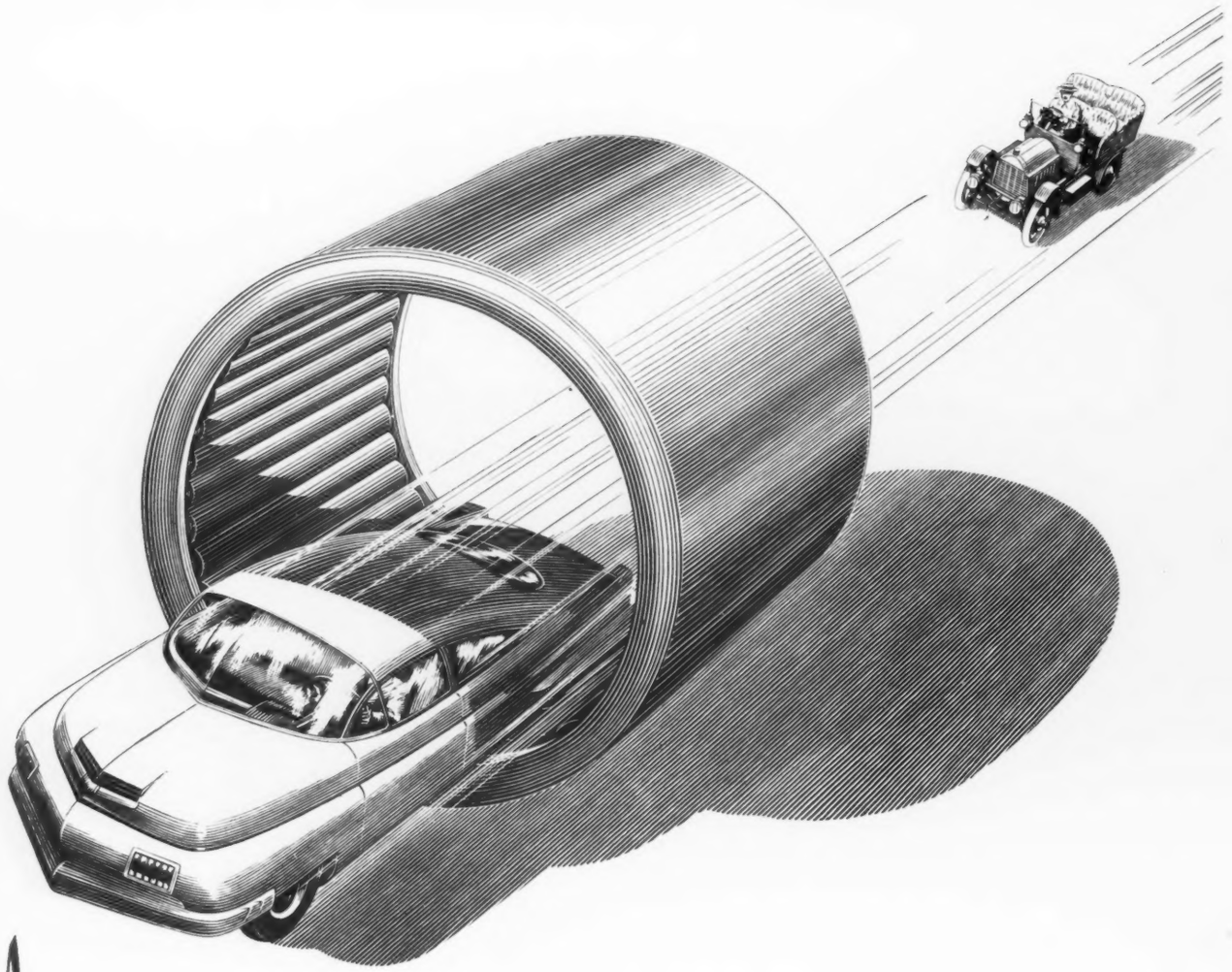
New ideas in upholstery fabrics aided by Torrington Needles

NEW fibres and knitting techniques constantly increase the scope of knitted fabrics. The strikingly beautiful printed upholstery cloth illustrated here is knitted before application of printed designs. The inherent stretching ability of this fabric permits it practically to flow into position and adapt its shape to the chair.

The knitting of such fabrics, for which there is a growing popular demand, calls for needles of completely reliable temper, strength and finish. Torringtons can be relied upon because their quality is assured by the advanced machine manufacturing methods developed and used exclusively by Torrington. Whatever your knitting requirements, there's a Torrington Needle to meet your need.

THE TORRINGTON COMPANY
Established 1866
Torrington, Conn., U.S.A.
Branches: New York • Philadelphia • Chicago
Greensboro, N.C. • Boston • St. Louis • Toronto, Canada

TORRINGTON *Latch Needles*



Another Engineering Advancement that is Bringing Down Costs

Engineering methods and materials have come a long way since those days in the 'twenties when the "medium priced car" sold at $3,000. And each subsequent engineering advancement has contributed to better performance at lower cost.

That's what Torrington Needle Bearings are doing—*by providing anti-friction advantages and lowering costs all along the line...*

First costs are low because Needle Bearings are adaptable to precision production at low unit cost.

Assembly and housing costs are low: the bearing's unit construction facilitates handling and speeds assembly; and only the simplest housing is required—a bore machined to proper dimensions.

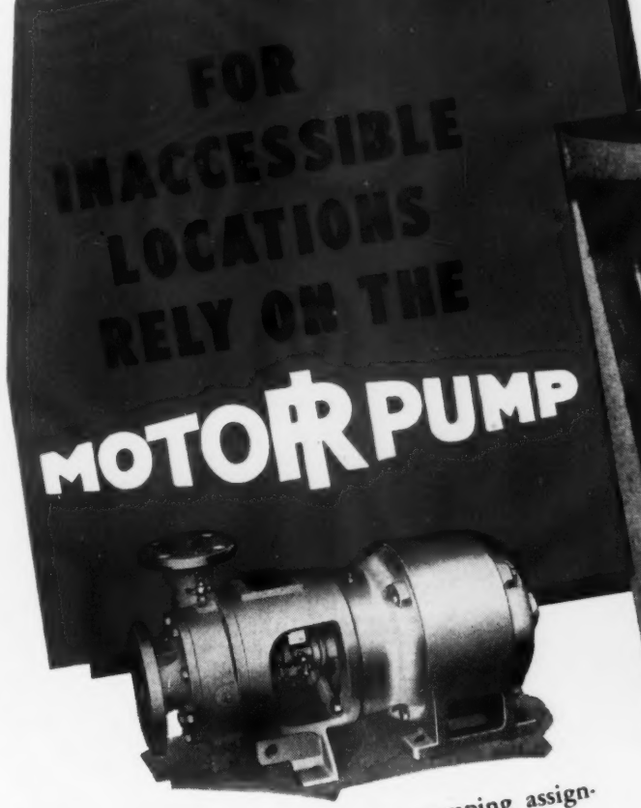
And "last cost" is low: for the high capacity and efficient lubrication of Torrington Needle Bearings insure long service life. Needle Bearings never seem to wear out or require replacement.

If you are seeking improved performance at lower cost and are not fully aware of the possibilities of Needle Bearings, send for our Catalog No. 32 which gives a comprehensive picture of their many advantages.

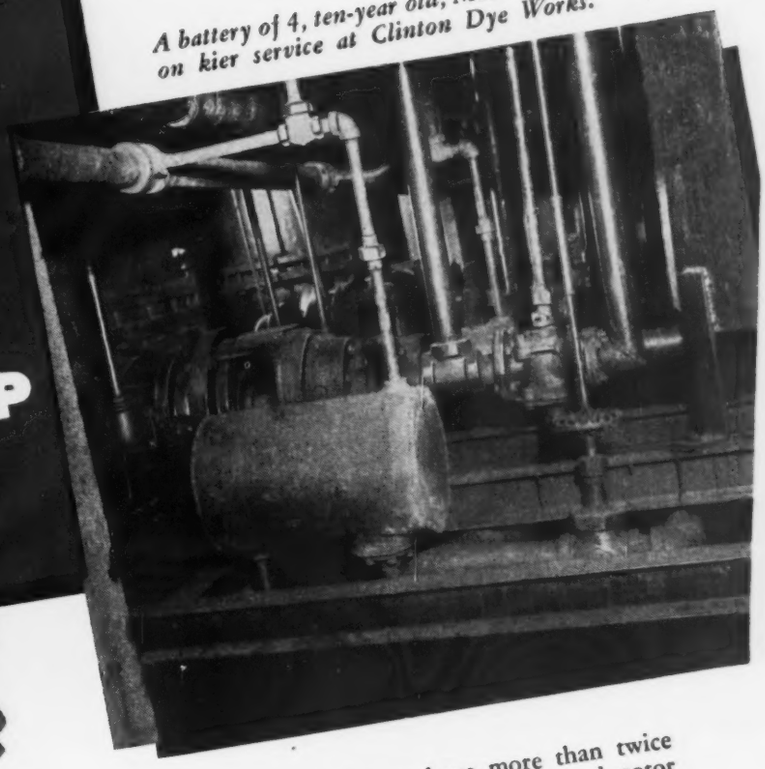
THE TORRINGTON COMPANY
TORRINGTON, CONN. • SOUTH BEND 21, IND.
Offices in All Principal Cities

TORRINGTON NEEDLE BEARINGS

FOR INACCESSIBLE LOCATIONS RELY ON THE MOTORPUMP



A battery of 4, ten-year old, Motorpumps on kier service at Clinton Dye Works.



Kier service is an undercover pumping assignment that demands the best in pumps. The Motorpump is built to be just that. That's why so many mills rely on Motorpumps for punishing services where neglect is so apt to occur.

Here are some of the hidden qualities that give Motorpumps the stamina for such continuous undercover service:

1. The single, oversize shaft for both motor and pump is designed for a maximum deflection of .001 inch at the end. This prevents impeller whip and eliminates stuffing-box troubles.
2. The oversize bearings have more than twice the radial and thrust capacity of standard motor bearings.
3. 70 years of Cameron experience are built into this hydraulic champion.
4. Simplicity—there is only one moving part—the rotor.
5. The most advanced metallurgy known to hydraulic engineers is embodied in the Motorpump.

Ingersoll-Rand engineering service is yours for the asking. Call our nearest branch office.

COMPRESSORS
CENTRIFUGAL PUMPS
OIL & GAS ENGINES
TURBO BLOWERS
CONDENSERS
AIR TOOLS
ROCK DRILLS

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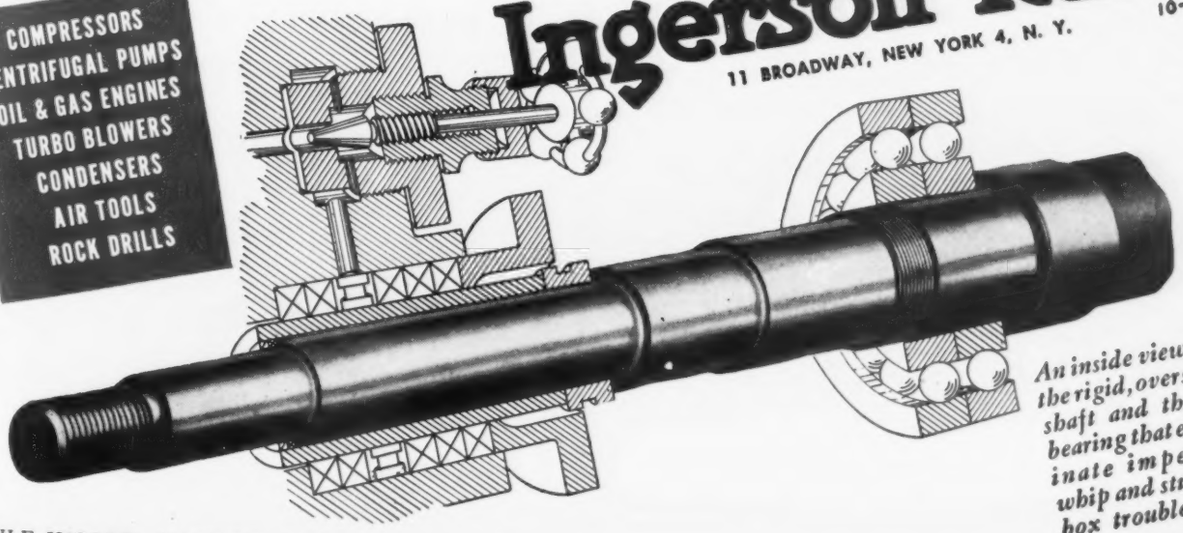


An inside view of the rigid, oversize shaft and thrust bearing that eliminate impeller whip and stuffing box troubles.

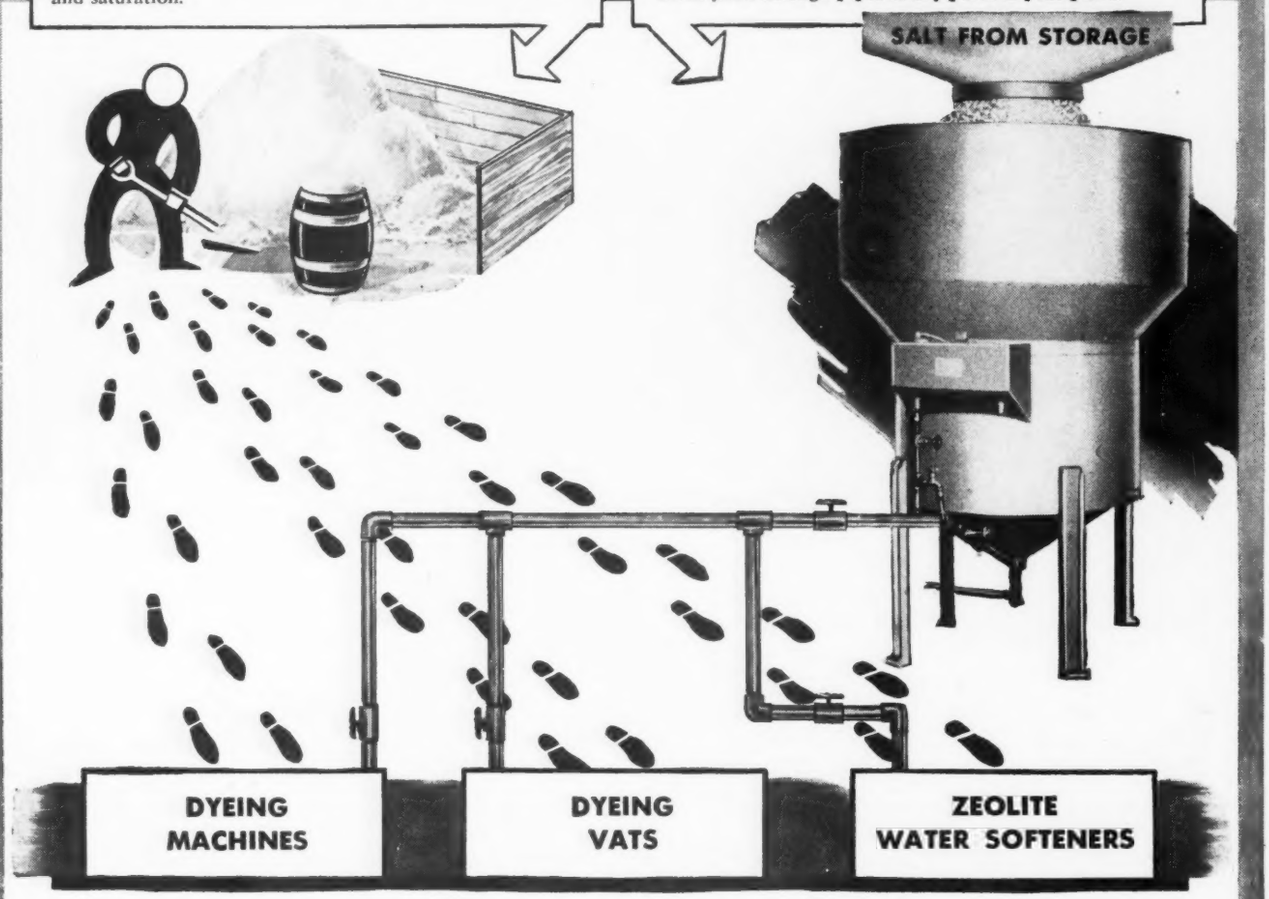
When you "PASS the SALT"

Old, Hard Way Wastes Man-Hours, Money!

From storage, salt must be repeatedly shoveled, measured, hauled, dumped, dissolved. Salt gets spilled. Time and labor are wasted. And resulting brine is of uncertain purity and saturation.

New, Easy Way SAVES Man-Hours, Money!

From storage, salt feeds directly into Lixator hopper. 100% saturated crystal clear brine exceeding the most exacting chemical purity requirements is produced automatically. Brine *flows* through pipes to any point in your plant.



Salt handling ends where your automatic Lixator begins to operate. Using economical Sterling Rock Salt, the Lixator supplies *100% saturated*, free-flowing, crystal clear brine by pipe to any desired number of points you wish. There's economy in its gravity flow . . . economy in its mechanical perfection.

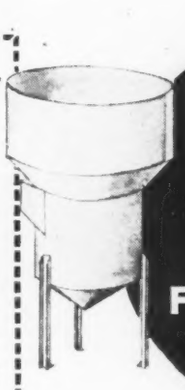
By eliminating wasted man-hours and wasted salt due to handling, spills and dissolution in storage, Lixate users report savings as high as 20%. And remember, besides meeting all of your regular operating and processing needs, your Lixator provides a perfect brine for zeolite water softeners.

"Significant Savings from the Lixate Process"

—declares **ZERRY L. POTTS,**
***Dye House Foreman,* The Stead & Miller Co.**

The full story of how such savings are achieved is told in our free booklet, "The Lixate Process for Making Brine." Write for your copy:
INTERNATIONAL SALT COMPANY INC., Dept. TW-1, Scranton, Pa.

Name _____
Firm _____
Street _____
City _____ *State* _____

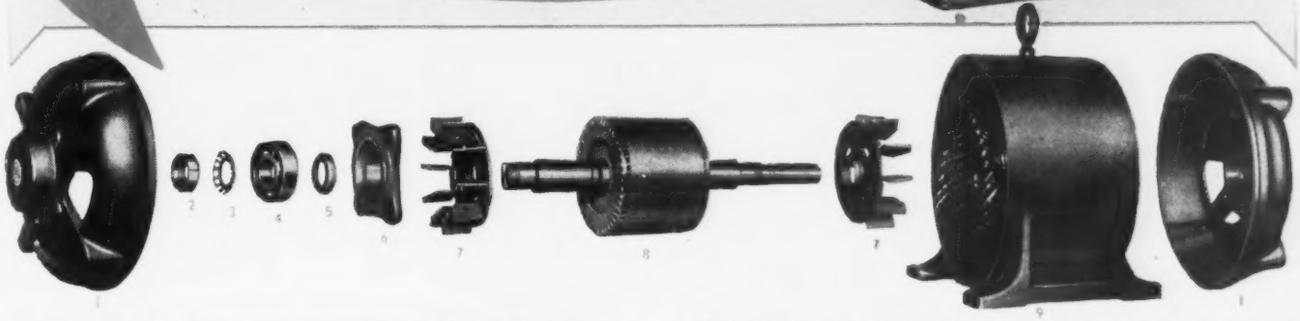


The **LIXATE** *Process*
FOR MAKING BRINE
★ ★ ★
INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

These Design Features of

CENTURY FORM J SQUIRREL CAGE MOTORS

Assure Protection and Long Life On General Purpose Applications



1. Bearing Brackets are ruggedly built to maintain bearing alignment; top half is closed to prevent falling objects and dripping liquids from entering the vital parts of the motor. Cooling air enters through openings in the bottom half of the bracket.

2. Bearing Nuts and outer Grease Seals lock the inner ball bearing race on the shaft and fit over a machined concentric extension on the inside of the bearing housing in the end bracket — forming a grease sealed enclosure — keeps dust out, grease in.

3. Lock Washers hold the bearing nuts tight.

4. Ball Bearings are grease lubricated, self contained, single row open ball bearings. Bearings may be removed and cleaned or replaced and positively locked in place when reassembled.

5. Grease Seals extend over a machined concentric extension on the inside of the bearing plate, forming a grease seal for the inside end of the bearings.

6. Bearing Plates hold the outer bearing race in place and close the inside of the bearing housings.

7. Ventilating Fans, one on each end of the rotor, and scientific arrangement of air passages remove heat and reduce danger of hot spots — assure long insulation life.

8. Welded Copper Squirrel Cage Rotor provides positive uniform cross section of conductors which gives uniform operating characteristics and long life.

9. Cast Iron Frame is rigidly reinforced with inner ribs; ventilating passages are large and smooth. Stator core provides a high degree of resistance to industrial atmospheres and moisture in damp areas. This is a result of Century's Triple Insulation — (1) high dielectric slot insulation, (2) use of the latest scientific developments in magnet wire, (3) windings sealed with Century special insulating compound.

Specify Century Motors on all your electrically powered equipment. Engineered to the functional characteristics of the machines they drive to assure top performance — Century Motors are a vital factor in producing a better product at a lower cost.

Century C MOTORS

Century Squirrel Cage Motors are available in sizes 1/6 to 600 horsepower.

CENTURY ELECTRIC COMPANY • 1806 Pine Street • St. Louis 3, Missouri

446

Offices and Stock Points in Principal Cities

From the files of The Armour Soap Sleuth...

A Couple of Clues...

In his laboratory just off 31st Street the Armour Soap Sleuth was thumbing through the cases in his files . . . dreaming happily over these successes which had established him as an ace trouble-shooter. "Aha," he cried, beaming at cards on two of his famous cases.

"The Case of The Colorless Cottons! Egad, I'll never forget the trouble that mill had with colors! Got them to use Flint Chips in the final finishing – now their *dyed* and *printed goods* are *bright* and *sparkling!*"

"And *The Case of The Kier-Stained Cotton . . .* Flint did the trick there, too! The dyeman and the bleacher were friends again when I explained that a faulty kier boil had caused the *resist spots* and *cloudiness in dyeing!*"

"Won't admit it," the Sleuth went on, thinking aloud, "but without good products I'd be a failure! Now take high-titer Flint – it's made to order for these two cases. A good soaping with Armour's Flint Chips removes excess dyestuffs, clears the whites, brightens and fixes colors . . . *your cottons always come out bright and clean!* And Flint gives you a *better, cleaner* kier boil because it penetrates quickly, rinses fast and *stays active under steam!*" With that the Sleuth was off to solve another textile problem.

INDUSTRIAL SOAP DIVISION

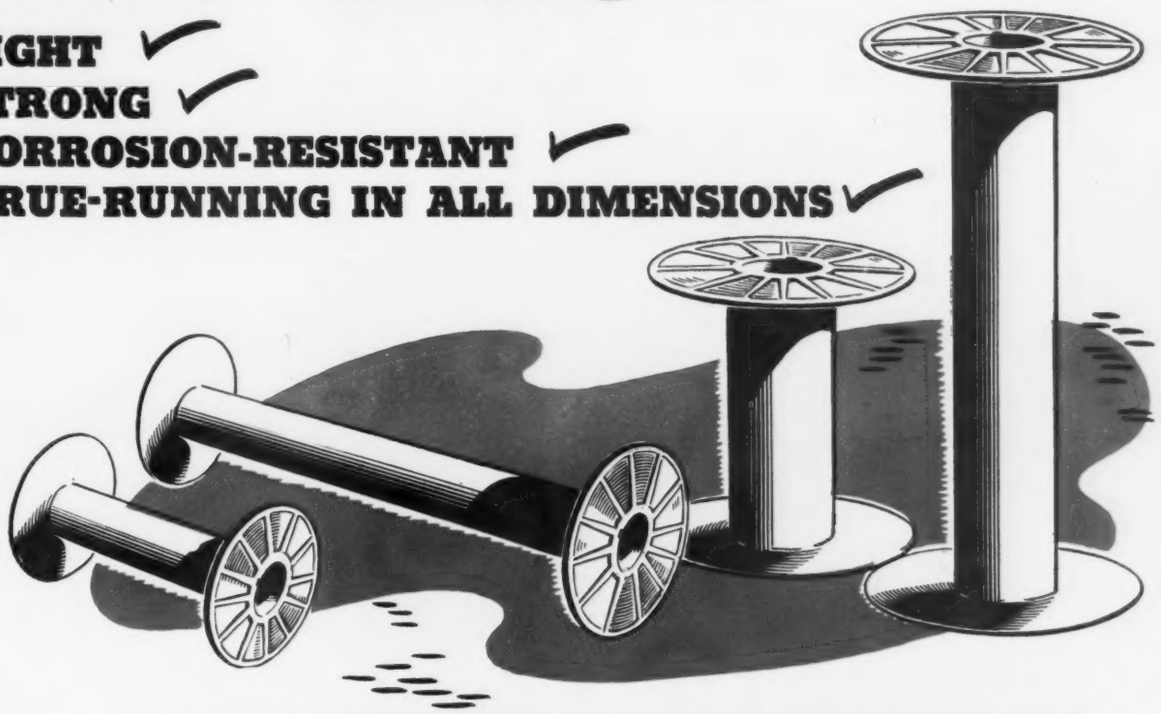
Armour and Company

1355 West 31st Street • Chicago 9, Illinois

How UP-TO-DATE are you on ALUMINUM?

WARP BEAMS...

LIGHT ✓
STRONG ✓
CORROSION-RESISTANT ✓
TRUE-RUNNING IN ALL DIMENSIONS ✓



with REYNOLDS ALUMINUM

ALUMINUM Tricot Warp Beams, for example, designed by equipment manufacturers working with Reynolds technicians, meet the exacting requirements of the rayon industry.

Their light weight means easy handling and low shipping costs! Their high strength and excellent corrosion resistance results in long life and low maintenance cost. Precision-built, aluminum warp beams stay true-running in operation—there's no distortion.

As a result, warping speeds are increased, vibration and bearing wear are reduced, quality of fabrics is improved, and efficiency is increased all along the line.

Consider Aluminum . . . Consult Reynolds. Write for information on sources of supply of aluminum warp beams. Whatever your interests, Reynolds engineers will gladly work with you. Offices in principal cities. Phone nearest office or write Reynolds Metals Co., Aluminum Textile Sales Div., 2535 S. Third St., Louisville 1, Ky.

QUICK FACTS FOR QUICK READING

- **Aluminum alloys developed by Reynolds possess unit strengths greater than many structural steels.**
- **Section for section, Reynolds Aluminum alloys weigh only ⅓ as much as steel.**
- **Highly corrosion-resistant, they withstand the high humidity common to many textile processes.**
- **Permanent dimensional stability reduces vibration, makes higher speeds possible.**
- **Fabricating ease, combined with low material costs insures low over-all cost.**

REYNOLDS METALS

REYNOLDS ALUMINUM

The Great New Source of

INGOT • SHEET • SHAPES • WIRE • ROD • BAR • TUBING • PARTS • FORGINGS • CASTINGS • FOIL • POWDER

9057-A9-1

Many of the inherent qualities in Gas contribute to its unit and overall economy in use. Further, the research achievements of the American Gas Association and Gas equipment manufacturers in sponsoring advanced apparatus to utilize to the utmost the advantages of this modern fuel, add to its economy.

Among the contributions to economy of Gas application in industrial plants are: *speed*—desired temperatures are attained in shorter time with Gas equipment; *controllability*—which provides and maintains the precise temperature required; *simplicity*—Gas equipment requires less space, maintenance, attention; *elimination of storage*—Gas requires no capital investment in stored fuels, again saves space; *dependability*—Gas is there when you want it; *uniformity of production and elimination of rejects*—Gas users report that production has been improved, products are superior, seconds or rejects cut to a minimum or eliminated, since switching to Gas.

The economical application of Gas to your specific operations can best be explained by the Industrial Engineer of your local Gas Company. His service is complete, you incur no obligation.

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

THE TREND IS TO GAS

FOR ALL
INDUSTRIAL HEATING

Powerful

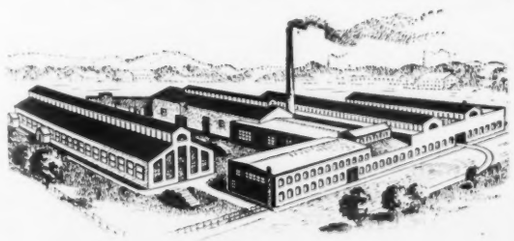
IS THE WORD FOR

SULFRAMINE DT*

Ultra's amazing new POWDER detergent

Leading textile mills are finding Sulframine DT an exceptionally efficient and economical detergent. Chemically classified as an alkylaminosulphate, it can be utilized in almost every phase of boiling off and dyeing. As an emulsifier and foaming agent, Sulframine DT dissolves readily, and it will form rich suds even in dilutions of one to ten thousand or more parts of water. Not even the most severe water conditions can affect its phenomenal properties.

Sulframine DT is totally immune to lime and magnesium salts . . . resistant to acids and alkalies . . . and will not deteriorate in storage. In fact, it can replace soap, eliminating the dangers of rancidity and stains left by unrinsed soap particles. Too, the thorough dispersing qualities of Sulframine DT make it an ideal dyeing assistant for rayon and acetate fabrics. Let a test prove your need for Sulframine DT. One of our technicians will be glad to bring you a practical mill run sample.



NOTE: Sulframine DT has potent commercial uses in dozens of other industries: Dry Cleaning, Dairy, Steel, Insecticide, Cosmetics, and Household Preparations. Wire or write—today—for more detailed information.

ULTRA CHEMICAL WORKS

INCORPORATED

Paterson, N. J. **Chicago, Illinois**

OTHER ULTRA CHEMICAL PRODUCT DEVELOPMENTS . . . ULTRAMINE • DETERGOL • SULFRAMINE DT PASTE
SULFRAMINE DR PASTE • SULFRAMINE POWDER • ALBUTEX • ALBUTINE • DERMASOL • ULTRA GLOSS B • DULLITE T

*Sulframine DT is made from an exclusive formula—U. S. Pat. Pending

SULFRAMINE DT—REG. U. S. PAT. OFF.

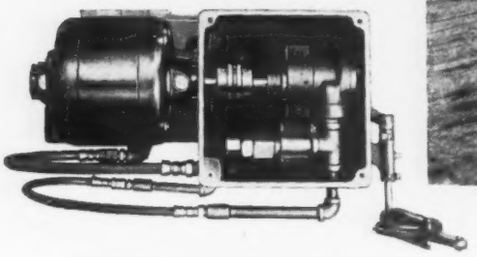
Feather Touch

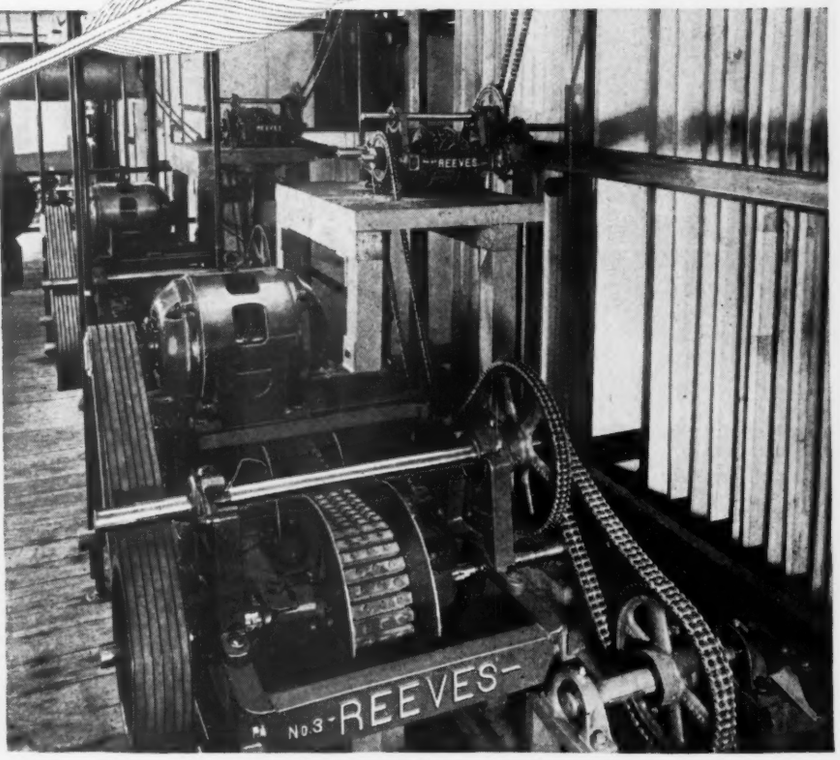
AUTOMATIC SPEED CONTROL

REEVES

HYDRAULIC AUTOMATIC

Activated by only Ounces of Pressure





REEVES Transmissions with Hydraulic Automatic Control driving squeeze rolls in dyeing unit of finishing range.

● REEVES sensitive, piston-type Hydraulic Automatic Speed Control enables you to run cotton, wool, rayon or any synthetic material in a continuous process without stretch on cloth.

So sensitive is the REEVES control that pressure of only 1 to 2 ounces through follower roll, dancer roll or other activating force will produce changes in speed to regulate tension automatically and precisely to the degree desired.

Pictured above is section of a Continuous Indigo Dyeing Machine completely equipped with REEVES Hydraulic Automatic Tension Control. In this range, cloth passes from one machine or section to another with NO intermediate handling.

After carbonizing, scouring and fulling, cloth passes into the first dyeing machine, followed by oxidation in the skying machine. It then goes into a second dyeing machine and a second skying machine before being taken to the folder.

To regulate the speed of the cloth throughout entire process, one machine is driven by a 3 h.p. REEVES Motodrive, with Electric Remote Control and remote position indicator. The carbonizer is driven through a REEVES Transmission with Hydraulic Automatic Control as are scouring machine, fulling machine and squeeze rolls on the two dye tanks. Each of the two skying machines is driven through a REEVES Transmission with manual control, driving from the variable speed shaft of the Hydraulically Controlled Transmission on the preceding dye tank.

With the hydraulic controls operating from the dancer rolls, cloth tension is regulated and all machines thus equipped are automatically synchronized with the one that is manually controlled.

REEVES "feather-touch" automatic speed control insures faster, more uniform textile production. It is simple, rugged, easy to service and maintain. It is tried and proven by many applications in range finishing—on beaming warpers, slashers and other winding processes. Our "field" engineers are thoroughly experienced in textile processes. Write us. Ask for copy of catalog W-450 and special information on REEVES Hydraulic Automatic Speed Control.

REEVES PULLEY COMPANY, COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

REEVES *Accurate Variable* SPEED CONTROL

• calcochrome alizarine gray 2BLS
• excellent fastness
• unusual exhaustion properties
• a money saver

Here is a new and improved wool dye . . . unsurpassed as a base for seasonable grays . . . also an excellent shading color for buffs, tans and taupes. Especially desirable for automotive and upholstery fabrics because of its high degree of fastness to light and water spotting, Calcochrome Alizarine Gray 2BLS is equally suitable in union, acid or chrome formulations for apparel fabrics.

Economy of application is one of the important advantages of Calcochrome Alizarine Gray 2BLS. When applied neutral its superior exhaustion property gives better color value for union dyeing as compared with the more common Alizarine Gray 2BL types.

Calco's new Color Announcement Bulletin containing complete information on this new dye will be sent to you on request.

Calcochrome Alizarine Gray 2BLS shows excellent fastness to:

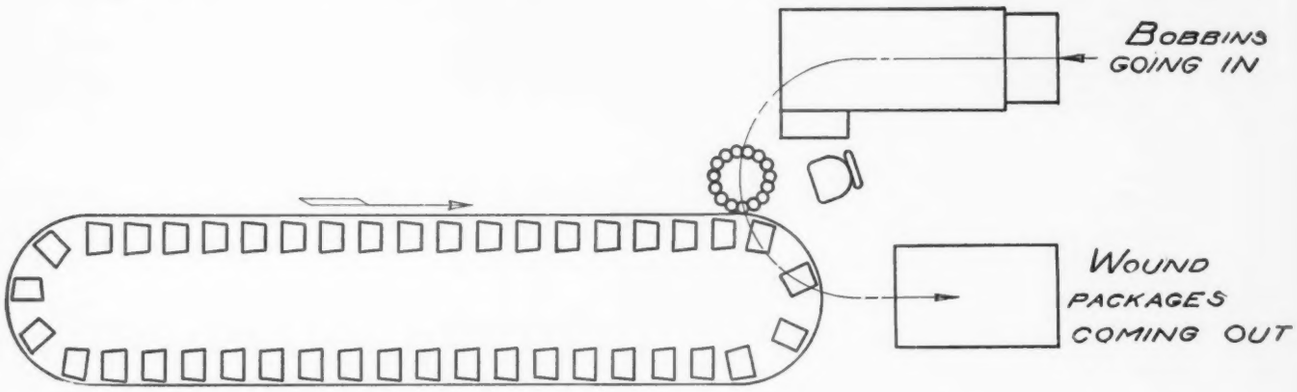
LIGHT · SEA WATER · PERSPIRATION · WASHING · WATER SPOTTING

Calco
REG. U.S. PAT. OFF.

CALCO CHEMICAL DIVISION • AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey

New York • Chicago • Philadelphia • Boston • Charlotte • Providence

ABBOTT AUTOMATIC WINDER



The moving assembly line principle has always been the essential feature of Abbott winders and is not available in other makes.

The operator sits in one position, sets the full bobbins in a rotating magazine in front of her and doffs the full cones or cheeses at the same position.

There is no walking all day, stooping to pick up the bobbins, reaching over to tie them in, pushing trucks around the machine, etc. She works at the end of the winder out of the way of fly and dust. She does not have to strap a knotter to her hand and wiggle her thumb all day to tie knots.

As a result there is very little operator fatigue and yet the production in bobbins tied in per hour will average more than on any other equipment.

Any of the standard 6″ traverse packages can be wound—warping cones, knitting cones, wood or paper tubes.

The bobbins to be wound may be big or small, single or ply, warp, filling or combination wind, wood or paper.

Operators are quickly taught and maintain an even steady production.

The skill of winding is built into the machine.

ABBOTT MACHINE COMPANY

Main Office and Factory: Wilton, New Hampshire

Southern Representative: Mr. L. S. Ligon, Greenville, S. C.

COOPER "CERTIFIED" STAINLESS STEEL VALVES

You specify - We certify

Guessing is no longer a factor in determining whether or not the composition of your Stainless Steel valves meets exact specifications — not since we introduced "Certified" Stainless Steel valves.

Now you can be sure you will get exactly what you need. Because, in production, Cooper *registers* the analysis of each heat and stamps each casting with its heat number. Every Cooper unit, therefore, is positively identified. Duplication of analysis in re-orders is simple. And the chance of a mix-up in storage is greatly lessened.

The Cooper valve certification method applies to all parts which come in contact with the fluid being handled. As a Cooper customer you get your certificate on request with each unit specified.

This method of certifying valves is made possible by Cooper's complete foundry service. The metallurgical, engineering and manufacturing processes, including casting, heat-treating, machining and testing are all here. And everything is under one roof for finger-tip control of each production phase of your valve.

The standard types of Cooper "Certified" Stainless Steel valves now available include: Globe, Gate, Y, Check, Needle, Quick-opening. A complete line of stainless steel pipe fittings are also available.

Cooper's up-to-the-minute facilities for casting intricate stainless steel, monel, and nickel parts are unique. If you use such parts our engineers and metallurgists can offer valuable help. For complete data on "Certified" Stainless Steel valves produced in a money-saving manner, drop us a line — today.

THE ONLY ALLOY FOUNDRY WITH ALL THESE FACILITIES

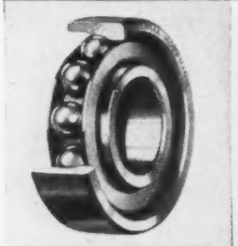
- Laboratory control over raw materials and finished products.
- Dual foundry . . . both hand and machine molding.
- Electric arc and high-frequency-induction melting furnaces.
- Centrifugally-cast castings.
- Heat treating of castings up to six feet.
- X-ray and Gamma-ray inspection.
- Zyglo detection of surface imperfections.
- Precision Castings.
- Machine shop . . . specially equipped for finishing stainless steel.
- Improved cleaning . . . including Lustracast electrolytic finishing which leaves all surfaces bright.
- Castings furnished rough, polished or fully machined . . . one ounce to two tons.
- Development of special alloys to meet unusual requirements.
- Technical consulting service.

THE COOPER ALLOY FOUNDRY CO.
215 Bloy Street
Hillside, New Jersey

CA-102

THE *Cooper* ALLOY FOUNDRY CO.
STAINLESS • MONEL • NICKEL
THE LARGEST EXCLUSIVE STAINLESS STEEL FOUNDRY IN THE COUNTRY

PRECISION BEARINGS



Separable (Magneto) Ball Bearing

Single Row Ball Bearing

FOR EVERY LOAD, SPEED AND DUTY

108 DISTINCT SERIES

BALL, ROLLER AND THRUST

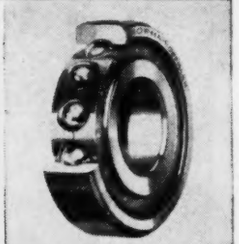
OVER 3000 SIZES

1/8" to 22 1/2" Bore—Metric and Inch Sizes

Write for the Catalog and Engineering Counsel

NORMA-HOFFMANN BEARINGS CORP'N. — STAMFORD, CONN., U. S. A.

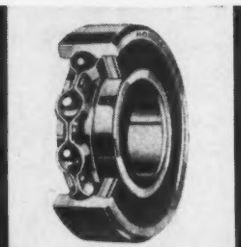
"NORMA-HOFFMANN"



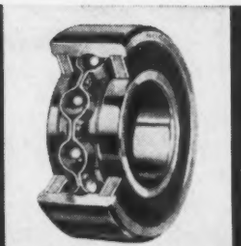
Litro ("CL") Composition Retainer Ball Bearing

Double Row Self-Aligning Ball Bearing

Shielded Type Single Row Ball Bearing

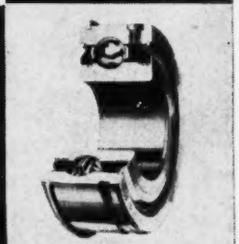


Single Felt Seal Ball Bearing

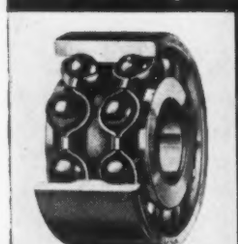


Double Felt Seal Ball Bearing

9000 Series (Feltless) Sealed Ball Bearing



"Cartridge" Fully Sealed Refillable Type Ball Bearing



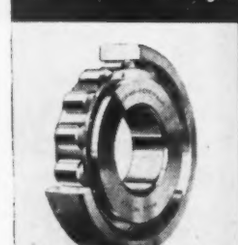
Double Row Ball Bearing

Extra Light Type Ball Bearing

Angular Contact Ball Bearing

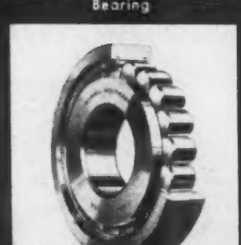
Extra Light Single Direction Ball Thrust Bearing

Single Direction Ball Thrust Bearing



Standard Cylindrical Roller Bearing

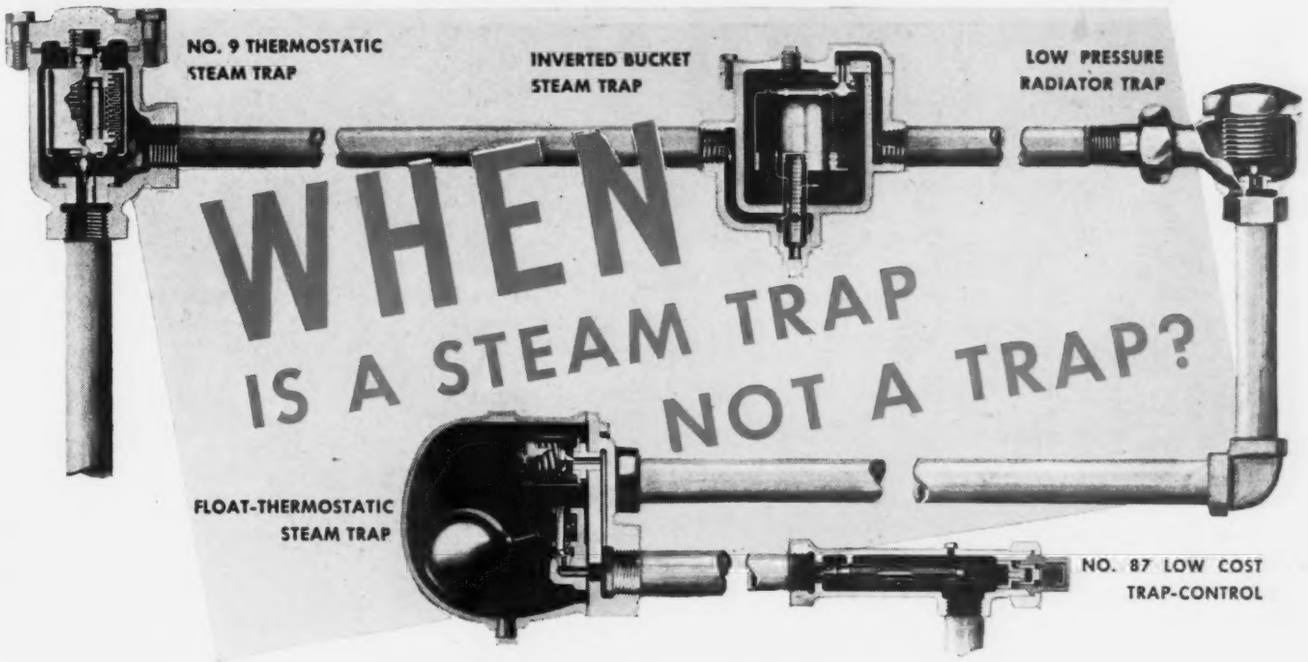
Type "E" Cylindrical Roller Bearing



Full Type (Retainerless) Cylindrical Roller Bearing

Extra Light Cylindrical Roller Bearing

Two-Lipped Cylindrical Roller Bearing


NO. 9 THERMOSTATIC STEAM TRAP
INVERTED BUCKET STEAM TRAP
LOW PRESSURE RADIATOR TRAP
WHEN IS A STEAM TRAP NOT A TRAP?
FLOAT-THERMOSTATIC STEAM TRAP
NO. 87 LOW COST TRAP-CONTROL

Thousands of steam traps that look as efficient as those above are not functioning properly if at all. Even a Sarco trap if improperly selected and installed will not do what a trap should do.

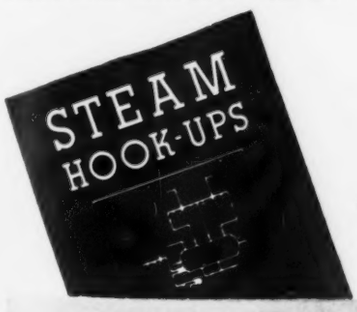
There is a simple, inexpensive solution to every steam, hot water, or cooling control problem, with some one of the many Sarco products.

NO MATTER HOW BUSY YOU ARE, the day is coming soon when your plant must be on a more efficient basis—as to fuel, metered water, out-put of machines and quality of your product. Sarco steam traps and temperature controls affect all four items. The cost for improvements is soon forgotten. Why not write us now and get started on the right track for efficient peace-time production?

Hundreds of ideas and hookups are given in the Sarco Hook-Up book and Bulletins. Ask for them.

HAVE YOU—

1. *The right kind?*
2. *The right size?*
3. *For the right pressure?*
4. *Traps of correct design and construction?*
5. *And properly hooked up?*



THIS HOOK-UP BOOK HAS THE ANSWERS

122

FOUR STARS ON OUR E PENNANT TESTIFY TO SARCO PERFORMANCE IN THE WAR EFFORT

SARCO SAVES STEAM

Represented in Principal Cities

SARCO COMPANY, INC., 475 FIFTH AVE., NEW YORK 17, N.Y. • Sarco Canada, Ltd., 85 Richmond St., W., Toronto 1, Ont.

On this completely rebuilt heavy duty shaper at the Krautter-Weber Tool Works, the use of Veelos V-belt provided the following engineering advantages: 1. Eliminated overhead motor and overhead belt drive. 2. Provided better speed control... old drives had only one speed forward and return. 3. Ended noise and excessive vibration.

WHEN the Krautter-Weber Tool Works, Newark, N. J., decided to modernize this heavy duty shaper—built many years ago—it specified Veelos link V-belt on four vital drives. Efficient speed control was a "must"—and, in selecting Veelos, Krautter-Weber chose the belt that helps hold machine speeds at desired rates *by providing uniform belt tension and by eliminating belt slippage:*

1. Veelos Provides Uniform Belt Tension: Veelos patented link construction permits easy adjustment so that each strand of a multiple V-drive carries its exact share of the load. All strands constantly work together, delivering full power.

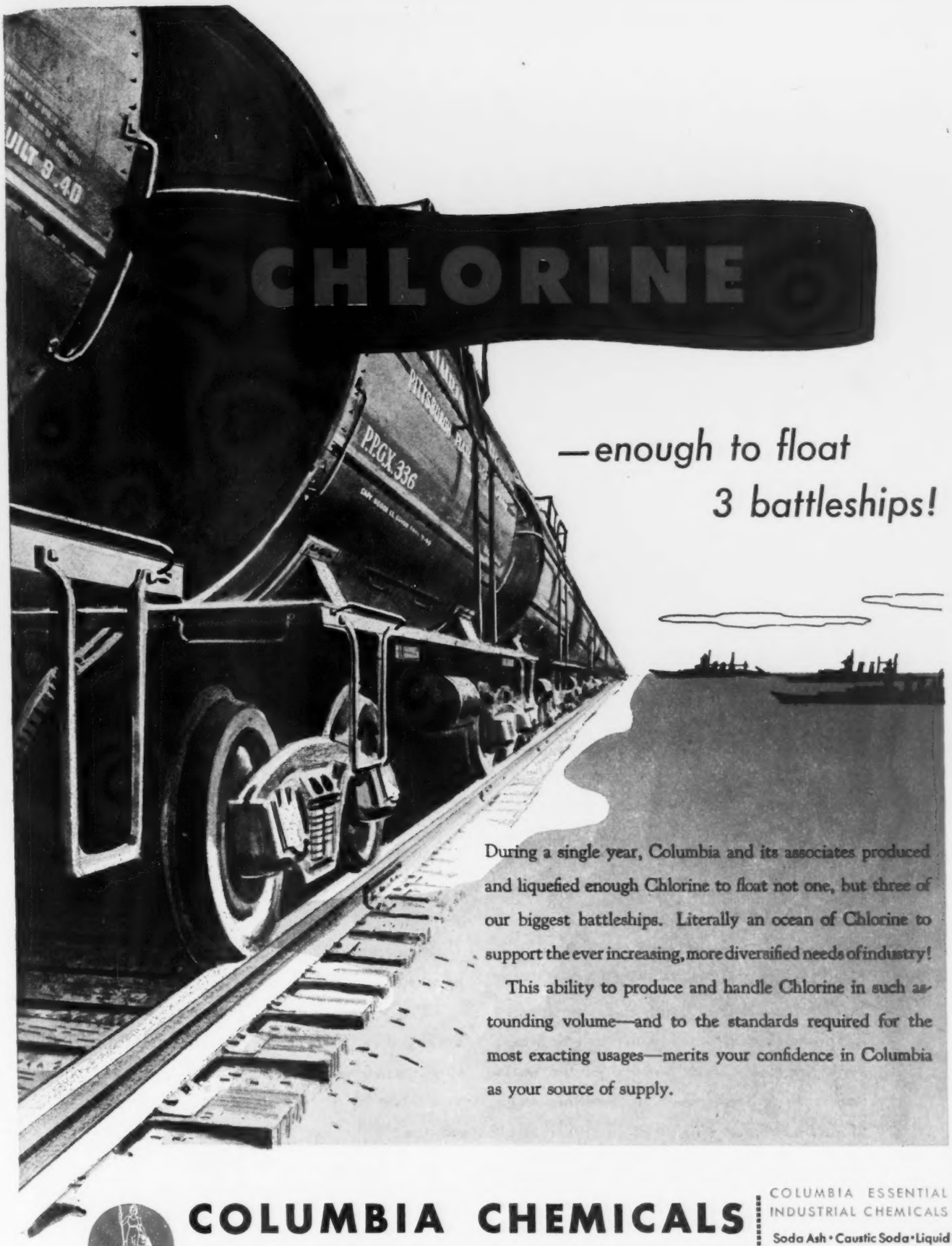
2. Veelos Ends Slippage: Quick, easy adjustment of Veelos ends belt slippage... keeps machinery running at full speed and assures full productivity.

To modernize old equipment... to assure maximum service on new equipment... to replace V-belts on any equipment... specify Veelos. A Veelos engineer will gladly assist you—just write and arrange an interview.

VEELOS
THE LINK
V-BELT
Adjustable to any Length
Adaptable to any Drive

MANHEIM MANUFACTURING & BELTING COMPANY
MANHEIM, PA.

LINK CONSTRUCTION UPS PRODUCTION



—enough to float 3 battleships!

During a single year, Columbia and its associates produced and liquefied enough Chlorine to float not one, but three of our biggest battleships. Literally an ocean of Chlorine to support the ever increasing, more diversified needs of industry!

This ability to produce and handle Chlorine in such astounding volume—and to the standards required for the most exacting usages—merits your confidence in Columbia as your source of supply.

COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY • COLUMBIA CHEMICAL DIVISION

GRANT BUILDING, PITTSBURGH 19, PENNSYLVANIA • Chicago • Boston • St. Louis • Pittsburgh
New York • Cincinnati • Cleveland • Philadelphia • Minneapolis • Charlotte • San Francisco

COLUMBIA ESSENTIAL INDUSTRIAL CHEMICALS

Soda Ash • Caustic Soda • Liquid Chlorine • Sodium Bicarbonate • Pittchlor • Silene EF (Hydrated Calcium Silicate) • Calcium Chloride • Soda Briquettes • Modified Sodas • Caustic Ash • Phosflake • Calcene T (Precipitated Calcium Carbonate)

No Oil to Cause Spoilage

CP Oil-less Cylinder Compressors have been developed for use where the air or gas compressed must be free from oil. No oil, grease or other cylinder lubricant is required. Piston and rod, completely supported by crossheads, are full floating, removing all weight from cylinder walls and stuffing boxes, thereby avoiding wear of carbon piston rings and hardened steel cylinder liner. Trouble-free operation and long life of wearing parts are assured. Only normal maintenance is required – no need for periodic rotation of piston rings.

CP Oil-less Cylinder Compressors are arranged for belt, motor or steam drive, in single stage and two-stage types. They are available in a wide range of sizes and ratings. Write for complete information.

★★★★★★★★★
PNEUMATIC TOOLS
ELECTRIC TOOLS
HYDRAULIC TOOLS
ROCK DRILLS

CHICAGO PNEUMATIC
TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

★★★★★★★★★
AIR COMPRESSORS
VACUUM PUMPS
DIESEL ENGINES
AVIATION ACCESSORIES

ATTENTION
DYE HOUSES AND FINISHING PLANTS

HOUGHTON'S
SURFACE ACTIVE AGENTS
ARE BACK IN "CIVIES"!

Ready for mill use are these great "money-value" wetting agents and detergents.

DETERGENTS

The year 1946 will be remembered by textile chemists as one of great processing development, such as the perfection of synthetic detergents superior to soaps.

Houghton has such detergents, ready to offer the industry. The first to be released is a "dischargee" from war service—N-100.

This is a liquid detergent containing no water, no inorganic salts. It will scour any type of fabrics . . . has high wetting efficiency . . . is free-rinsing . . . excellent for kier-boiling, soaping, boiling off and dyeing. One pound of N-100 has a scouring ability equal to at least four pounds of the best neutral soap. Write for new folder.

HOUGHTON'S
N-100

WETTING AGENTS

The SURFAX line of wetting out and rewetting agents has long been known to textile processors. It includes liquid soluble oils and semi-paste products which provide fast wetting speed and rapid penetration at low concentrations.

Basic ingredients which were formerly needed for other war purposes are now available without restriction, so SURFAX is yours to command—a speedy, non-oxidizing, non-volatile and economical aid for sanforizing, dyeing and wet processing.

E. F. HOUGHTON & CO.
Philadelphia or Charlotte

HOUGHTON'S
SURFAX

Today-

Your *Standard*
GATES VULCO ROPES

Are Giving BETTER SERVICE Than *ANY* V-Belts Ever Built Before!

To meet the needs of our Army's tanks, tractors and self-propelled big guns in combat service, it was necessary to develop V-Belts far superior to any that had ever been built before. Gates developed and built these greatly superior V-BELTS—and here is why this fact is important to you:--

Here is the reason

Every improvement developed by Gates for these Army V-BELTS has been added, day by day, to the quality of the standard Gates Vulco Ropes which have been delivered to you.

This is one of the very few instances in which improvements developed primarily for military use could be passed on immediately to you. Ordinarily, you would have had to wait. But in the case of Gates V-belts it was clearly recognized that industry simply had to have the best V-belts that could be made in order to maintain the production volume that was essential to winning the war.

That is why Gates has been able to pass on to you, day by day, every V-belt improvement developed for our armed forces during the war—and that is why your Standard Gates Vulco Ropes are today outperforming any V-belts ever built before!

All Gates V-Belts are Built With

The Patented **CONCAVE SIDE**

Gates

THE MARK OF SPECIALIZED RESEARCH

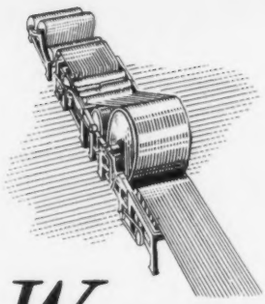
THE GATES RUBBER COMPANY

Engineering Offices and Jobber Stocks in All Large Industrial Centers

461

GATES VULCO ROPE DRIVES

CHICAGO 6, ILL., 549 West Washington DALLAS 2, TEXAS, 1710 N. Market Street ATLANTA 3, GA., 521-23 C & S National Bank Building
CHARLOTTE 2, N. CAROLINA, 605 West Fifth St. NEW YORK CITY 3, 215-219 Fourth Ave. DENVER 17, COLO., 999 South Broadway
GREENVILLE, S. CAROLINA, 108 W. Washington Street BIRMINGHAM 3, ALA., 801-2 Liberty National Life Bldg.



Weavers of Mexico

● Four centuries ago the Mayan Indians knew almost every weaving method that is known today. They could weave the finest cotton crepe and voile or the strongest cotton canvas. Their fine blankets were woven in strips which were then sewed together.

Today—highly trained laboratory technicians constantly check each step of the processing to insure the uniform quality of Staley Textile Starches. Your guarantee of dependable performance from every shipment. Staley's complete line of unmodified and modified Starches make it possible to select a proper Starch for any sizing formula. Over a quarter-century of service and complete cooperation with the nation's textile mills enables us to help you with your sizing problems.

Number Seven in a series published as a Tribute to the Development of Weaving through the centuries

In the 16th Century—Montezuma, ruler of the Aztecs, demanded 2,000 decorated cotton blankets as an annual tribute from the conquered Mayans

Staley's CORN AND SOY BEAN PRODUCTS

STALEY STARCHES

A. E. STALEY MANUFACTURING COMPANY
DECATUR, ILLINOIS

ATLANTA · SPARTANBURG · PHILADELPHIA · SAN FRANCISCO · DALLAS · CHICAGO · NEW YORK · BOSTON

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Synthetics changed

"buying" into "selling"

NOT SO LONG AGO, the average textile mill considered the daily market reports on cotton, wool and silk quite the most important order of business. Prices of these and other natural commodities were subject to wide fluctuations—crop conditions, the international situation, market speculation could affect the price structure overnight. Buying of raw materials was more important than either manufacturing or selling, and the company's operations on the commodity exchanges often determined whether the mill ended up with a good year or a poor one.

The introduction of modern synthetics was a great stabilizing force for the textile industry. It introduced the *known cost factor* in the raw materials picture; no mill had to "hedge" on synthetic yarns or pile up huge and costly inventories against possible shortages.

The development of the modern synthetic yarn, Celanese*, gave the textile industry new fibres, suited to all kinds of improved textiles, that were not subject to the whims of nature. The properties, too, were constant; quality could be exactly controlled. Moreover these new man-created fibres opened up tremendous opportunities for improvements in textiles. They brought new standards of beauty, comfort, durability and ease of care to apparel and household furnishings. And for the natural fibres, they were a potent vitalizing force. Combination fabrics of cotton and Celanese, wool and Celanese, made possible new markets for the weaver, the garment maker, and in turn for the cotton grower and wool producer.

Textiles are only one of the industries that have benefited from modern synthetics. Celanese Plastics, another division of synthetics, have brought new advantages and economies to industries as far apart as automobiles and packaging, electrical appliances and shoe findings.

Celanese Chemicals, produced by synthesis, likewise, have exerted a far-reaching influence on a wide cross-section of industry. With properties precisely controlled to meet definite needs, these modern chemical products, in many cases synthesized from natural gas or crude petroleum, are primary materials for paints and lacquers, adhesives and preservatives, drugs and cosmetics, anti-freezes and lubricants.

Continuous research by Celanese Corporation of America in all three basic fields of synthetics—textiles, plastics and chemicals—is behind the growing service of Celanese products to virtually all industry.

*Reg. U. S. Pat. Off.

*"GREAT MOMENTS IN MUSIC"**
PRESENTED BY CELANESE
... EVERY WEDNESDAY EVENING
COLUMBIA NETWORK
COAST TO COAST

Celanese* { *TEXTILES* *PLASTICS* *CHEMICALS*

*Reg. U. S. Pat. Off.
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CELANESE CORPORATION OF AMERICA · 180 MADISON AVENUE · NEW YORK 16, N. Y.

MAGNESIUM NEEDLE BARS

do figure 8's at terrific speeds

Needle bars on hosiery knitting machines reciprocate over a complicated figure 8 course . . . and at split-second speeds. Weight of the bars is an important factor, therefore, in the machines' performance. Making them of lightweight Mazlo Magnesium permits increased knitting speeds, more production and superior products.

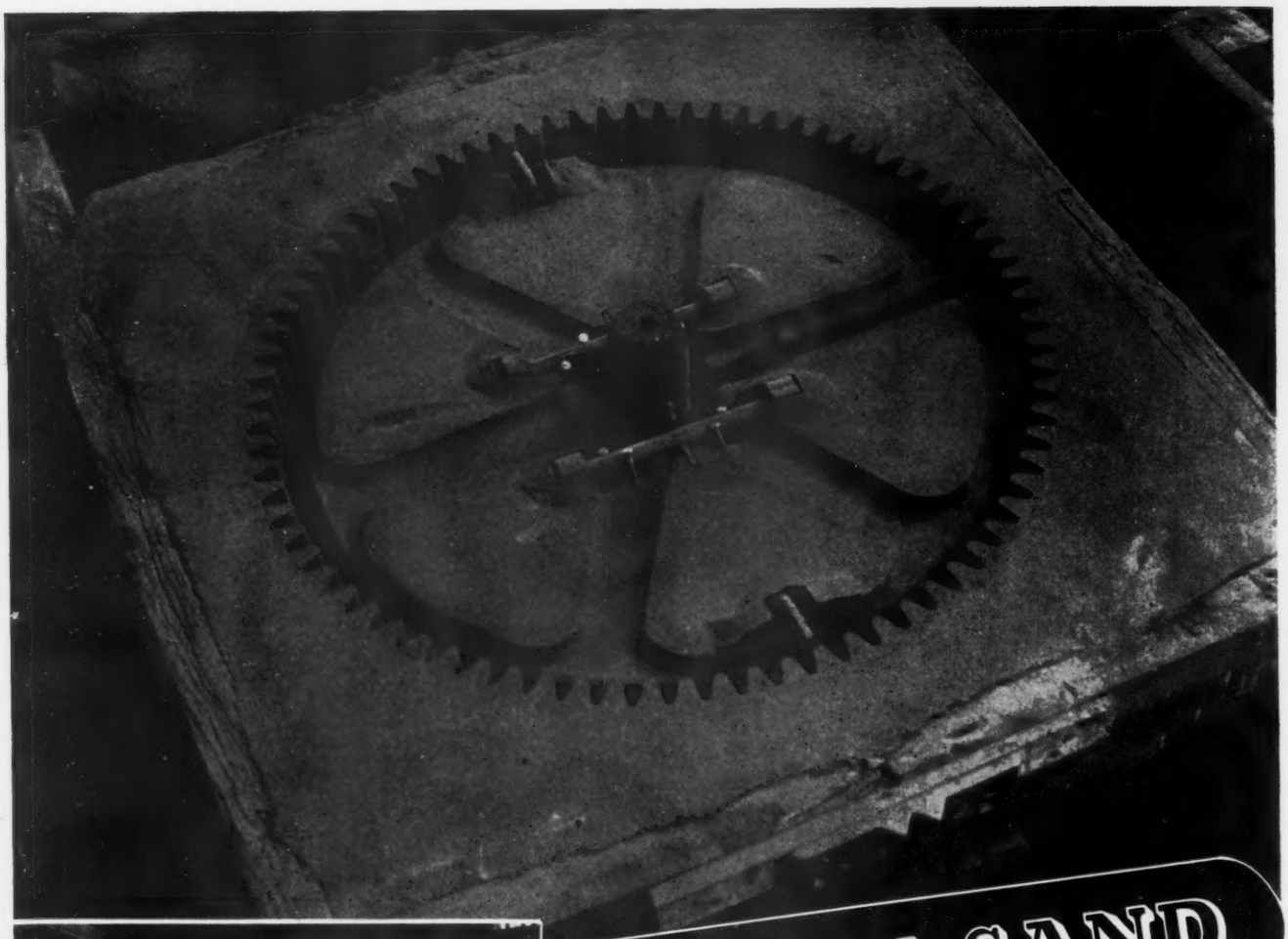
In tricot knitting machines, Mazlo Magnesium extrusions are being used in seven and fourteen foot lengths for needle, presser, sinker and guide bars, and many other places in the knitting action. Light in weight, vibration is reduced to a minimum . . . higher speeds are attained . . . service life is long.

May we assist you in determining where American Magnesium products can be used to best advantage in your textile equipment. Write Aluminum Company of America, Sales Agent for American Magnesium Products, 1705 Gulf Building, Pittsburgh 19, Penna.

MAGNESIUM MAZLO PRODUCTS

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA



GEAR IN SAND

Foundry work is one of the important services we are equipped to render the textile industry. A large stock of textile patterns is carried in stock and castings can be furnished you promptly. Delivery from the foundry, or machined, as you prefer.

The next time you need castings, send us your order. Our complete foundry facilities make possible the broad modernization service that we can render any mill. Let us work with you to make your machines more up-to-date, more efficient and more productive. We welcome the opportunity to supply estimates. Write or 'phone.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

are you keeping up with "buyer expectancy" today?

Miracles are not expected overnight by textile buyers . . . even though they do know of the developments in chemical treatments and their great promise.

But at the same time they do expect tangible improvement in stability, in slippage control, in handle, in appearance, in shrinkage control . . .

And that's what they are getting from smart manufacturers and finishers today who are using Resloom NC-50, Monsanto's new melamine finish. Resloom* NC-50 is *procurable now* in commercial quantities . . . it is not one of the "textile chemicals of the future."

And it offers *merchandisable advantages* to manufacturers of cotton shirtings, all-acetate rayons, rayon tropicals, mixed rayon-cotton-wools . . .

1. Stability with a soft, firm but resilient quality.

2. Improved launderability . . . retention of color, shape, dimension.

3. Improved dry cleaning quality . . . also ability to be ironed without puckering or blanching

and

4. Resloom NC-50 produces glazed chintz which is unsurpassed for retention of crispness and color and for long life.

How Does Resloom NC-50 Do It?

Unlike other stabilizing materials, Resloom NC-50 (melamine resin monomer) is projected into the heart of the individual fibers of the fabric and is polymerized there by heat. That means the Resloom stays there for the life of the fabric. And unlike ordinary type resin treatments, low concentrations are sufficient to accomplish its work, which means: (1) minimum chlorine pick up, (2) practically no change in fabric strength, (3) small, extra per pound cost of Resloom NC-50 is largely offset by the smaller amount required.

Send For Information

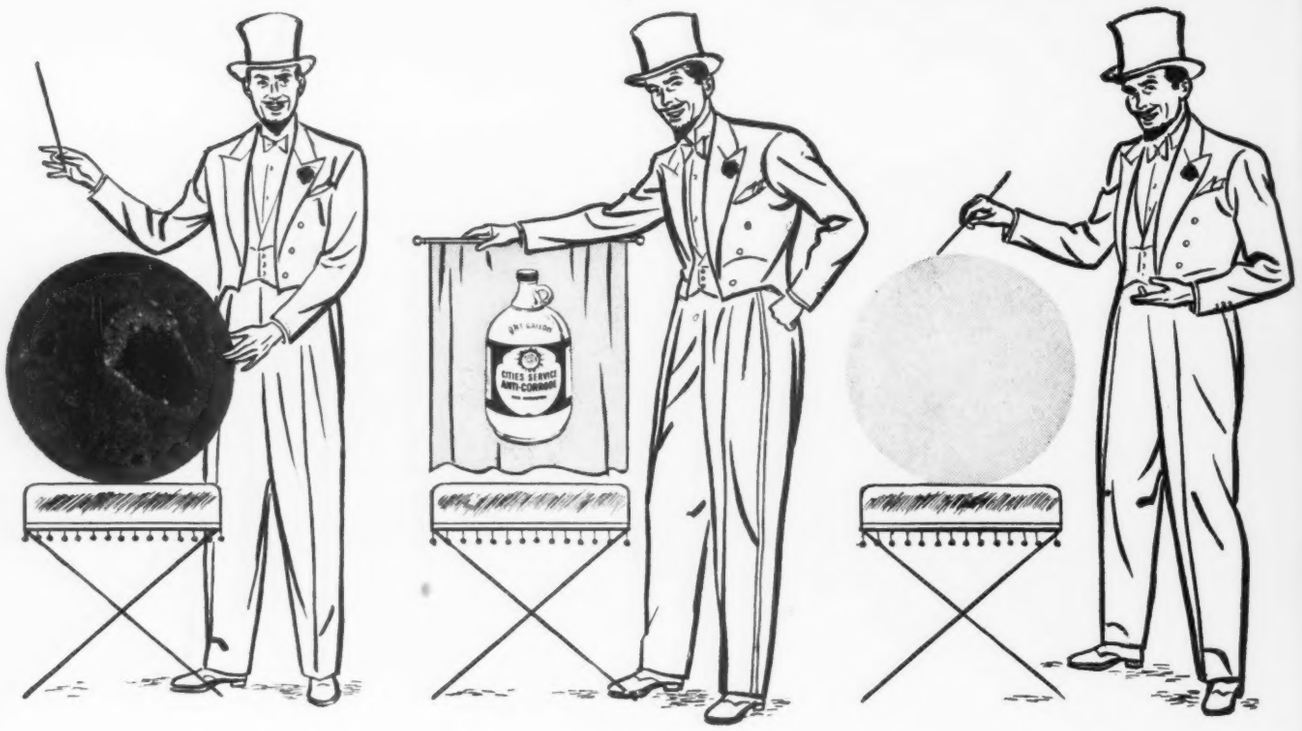
Resloom NC-50 is ready and proved for commercial application. Monsanto offers technical assistance in getting Resloom NC-50 started with your processes. Also, samples and technical data are available on this textile chemical as well as other Monsanto products for this industry. Simply write, wire or phone: MONSANTO CHEMICAL COMPANY, Everett Station, Boston 49, Massachusetts.

**Reg. U. S. Pat. Off.*

MONSANTO
CHEMICALS AND PLASTICS

The Textile
SERVING ∧ INDUSTRY . . . WHICH SERVES MANKIND

Now you see it_Now you don't



What you see is a close-up of rust formation, Industry's $100,000,000 annual toll. What you *don't* see is its quick elimination with CITIES SERVICE RUST REMOVER.

Converting your rust liability into profit isn't magic . . . it's made possible by Cities Service Rust Remover—an effective product—proved in scores of industrial plants. Easy to apply—inexpensive—can be used over and over again with little waste.

Once you have cleared your machined parts of rust, the next step is to protect them against further rusting. Then you will want one of the Cities Service Anti-Corrodes to provide an impenetrable film that really protects. One of our Lubrication Engineers will be glad to help you select the right one. Write, wire or phone our nearest office or . . .

Cities Service Oil Co.
Room 593 70 Pine Street, New York 5, N. Y.

Gentlemen: Please send me full information on Cities Service Rust Prevention Plan.

Name .....

Title .....

Company .....

Address .....

City ..... State .....

MAIL THIS COUPON TODAY

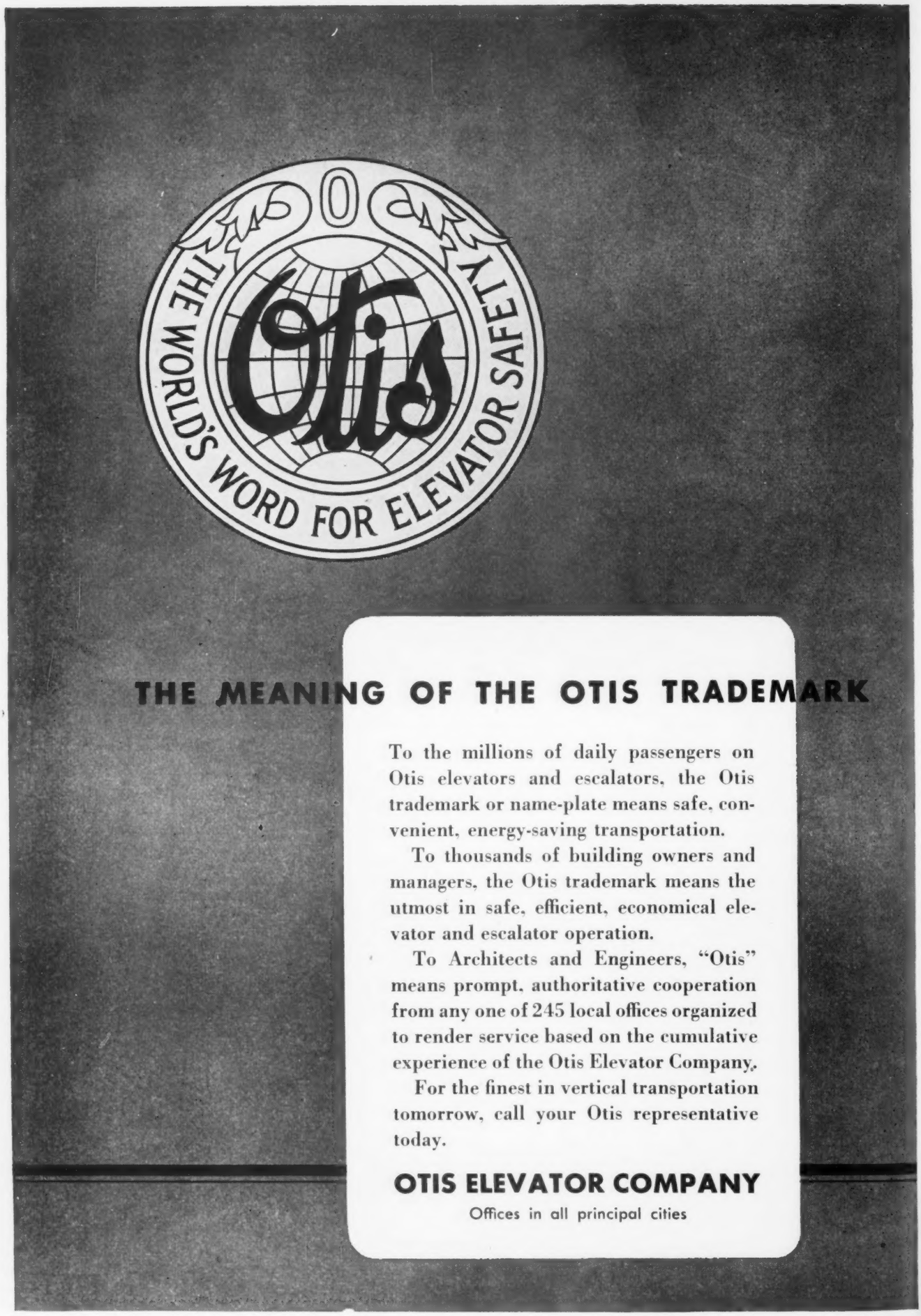
CITIES SERVICE OILS
ONCE-ALWAYS

At Royersford, needle making is a treasured craft. For here is experience handed down from needle maker to needle maker for three generations. And the hand that was master of the early craft is now the master of the modern techniques by which Spring-Beard Needles are made. America's leading hosiery manufacturers depend on Royersford Needles—to insure unvarying quality in full-fashioned knitting.

ROYERSFORD NEEDLE WORKS, INC., Royersford, Pa.
Makers of a complete line of Full-Fashioned specialties.

Royersford

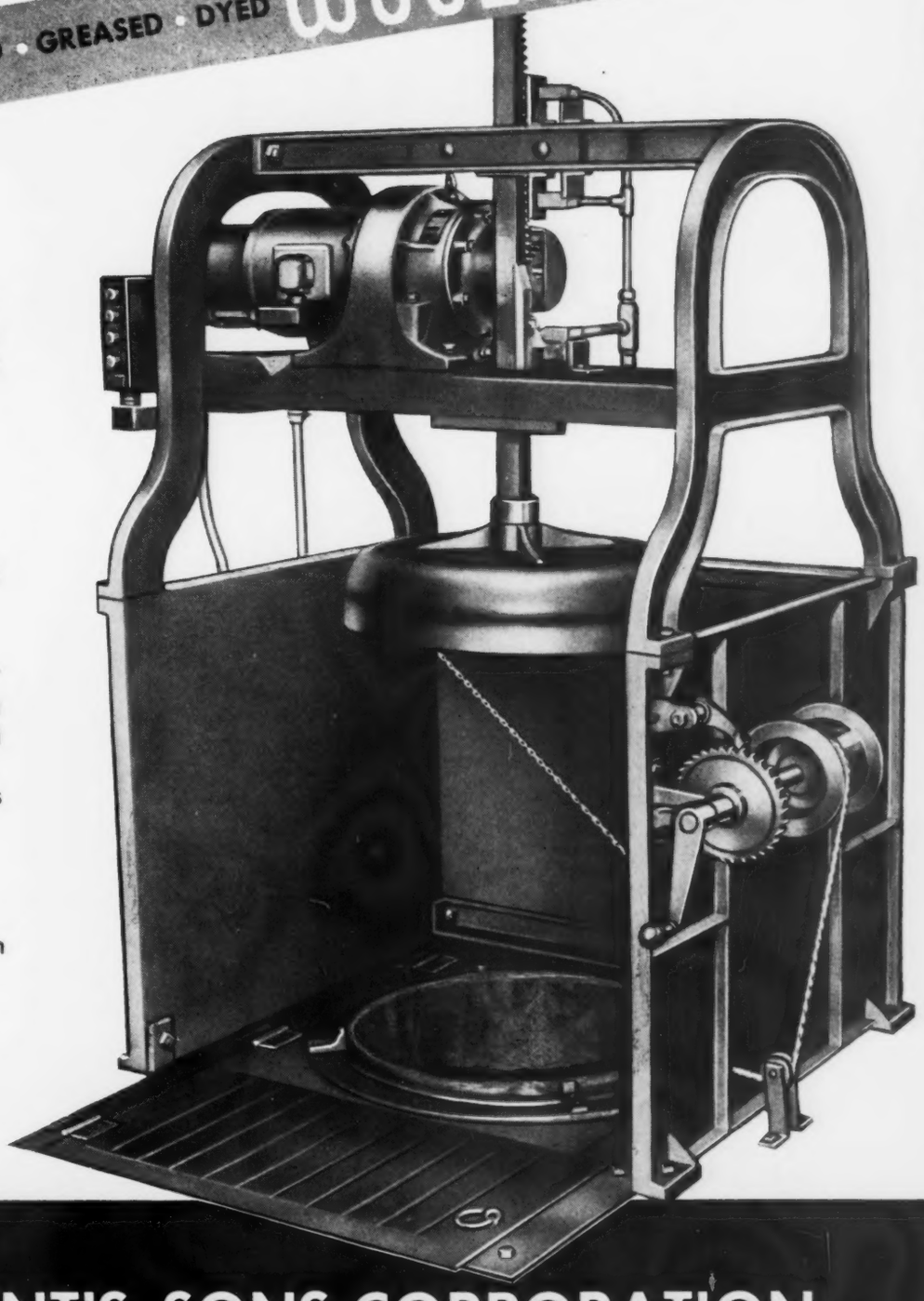
—the Master Needle Maker


THE WORLD'S WORD FOR ELEVATOR SAFETY
Otis
THE MEANING OF THE OTIS TRADEMARK
To the millions of daily passengers on Otis elevators and escalators, the Otis trademark or name-plate means safe, convenient, energy-saving transportation.
To thousands of building owners and managers, the Otis trademark means the utmost in safe, efficient, economical elevator and escalator operation.
To Architects and Engineers, "Otis" means prompt, authoritative cooperation from any one of 245 local offices organized to render service based on the cumulative experience of the Otis Elevator Company.
For the finest in vertical transportation tomorrow, call your Otis representative today.
OTIS ELEVATOR COMPANY
Offices in all principal cities

FAST ONE-MAN OPERATION

SARGENT'S Automatic BAGGING MACHINE

FOR SCOURED • PULLED • GREASED • DYED WOOLS NOILS • WASTE



Compact, fully automatic, of proven efficiency, the SARGENT BAGGING MACHINE *offers these advantages to the mill and warehouse owner:*

- One-man operation throughout
- Finger-tip control at all times
- Insures uniform bulk and weight of all bags packed
- Handles up to 10 bags per hour—100 to 150 lbs. per bag depending upon the wool or material bagged
- The Sargent bagging process is safe as well as rapid
- Requires little floor space
- Constructed to require minimum maintenance

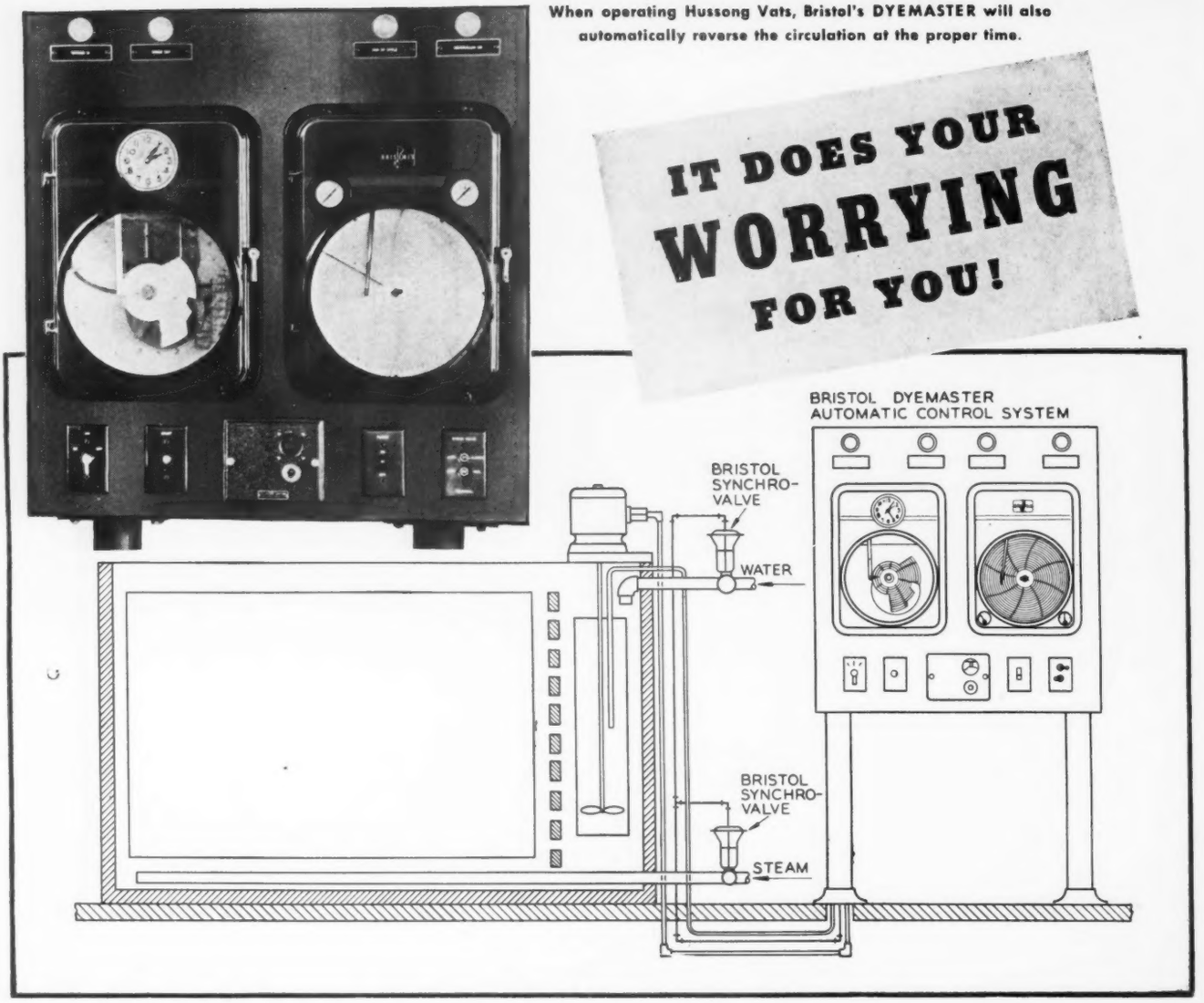
Write us for complete details

C. G. SARGENT'S SONS CORPORATION

GRANITEVILLE, MASSACHUSETTS, U.S.A.

When operating Hussong Vats, Bristol's DYEMASTER will also automatically reverse the circulation at the proper time.

IT DOES YOUR WORRYING FOR YOU!



When your dyeing machines and dye vats are under the automatic control of the Bristol DYEMASTER, you can forget:

Temperature at which soap is added . . . duration of boil off period . . . time at which wetting agent is added . . . time at which dyestuff is added . . . temperature of liquor during dyeing cycle . . . rate of temperature change . . . duration of dyeing period . . . time at which salt is added . . . discharge of dye liquor to sewer . . . addition of rinse water . . . duration of rinse period. In Beam and Package Machines and Hussong Machines: the instant when circulation must be reversed . . . duration of circulation in each direction.

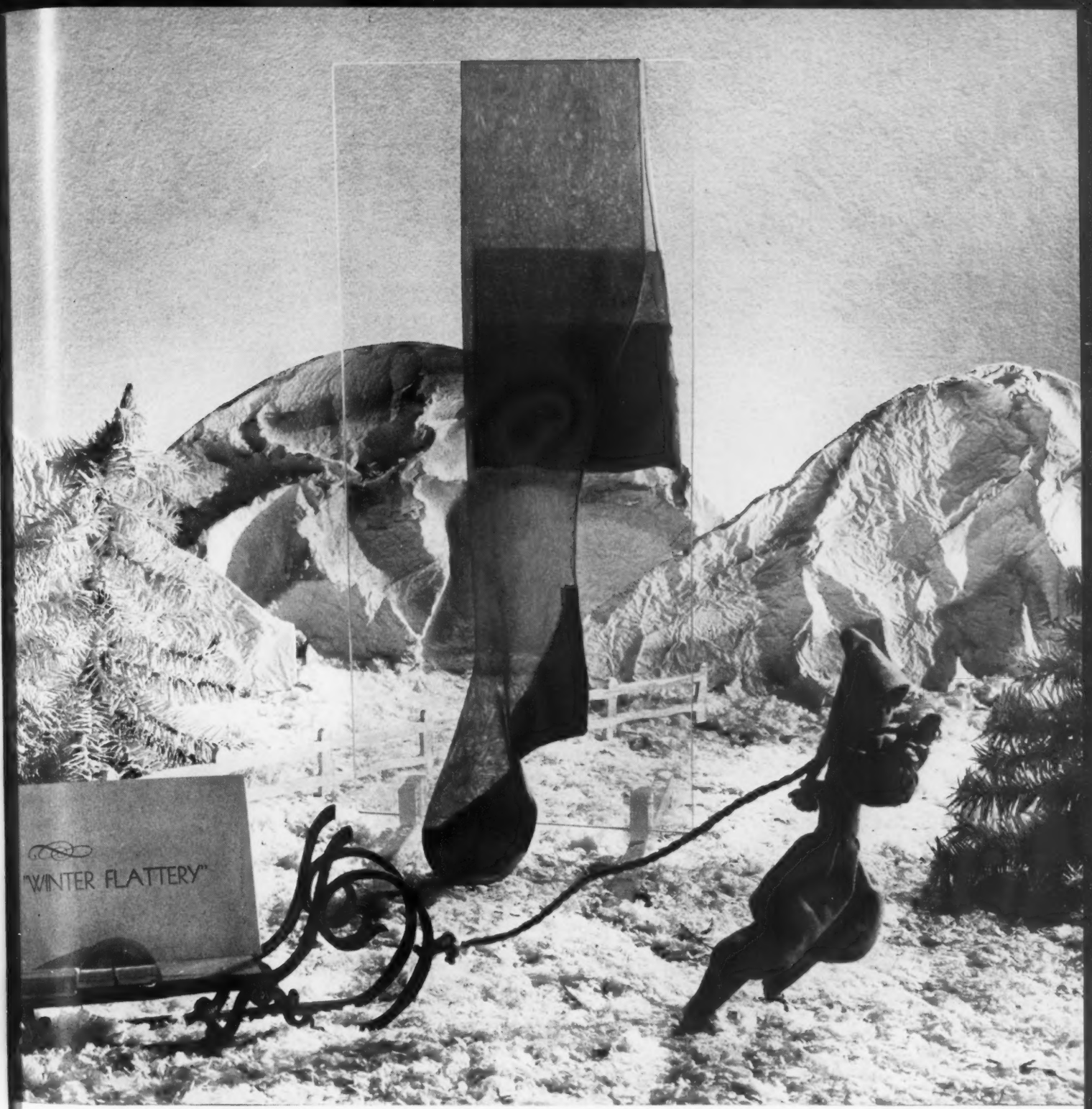
Once a correct procedure has been established, the DYEMASTER will see that it is followed faithfully in every succeeding batch — every shade run exactly alike . . . dyestuffs saved, due to elimination of add-dye cycles . . . steam and water saved . . . increased production, due to accurate timing of all steps and elimination of add-dye cycles.

When the formula is to be changed, the complete control system can be revised accordingly, in a matter of minutes.

Write for free Data Sheet No. 27 on DYEMASTER. THE BRISTOL COMPANY, 157 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ontario. Bristol's Instrument Co., Ltd., London, N. W. 10, England.)

Engineers process control for better products and profits

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS



Winter Flattery . . . Clear, flawlessly textured stockings are as flattering as winter beauty. Every full-fashioned stocking manufacturer knows that successful production depends on the quality of the needles used. Keep your Knitting Machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

THE WAR DECORATIONS OF TEXTILE MACHINE WORKS

Bur. of Ord. Flag and Navy "E"
July 25, 1941

One Star All-Navy "E" Burgee
January 25, 1942

Two Star Army-Navy "E"
July 25, 1942

Three Star Army-Navy "E"
January 25, 1943

Four Star Army-Navy "E"
January 11, 1944

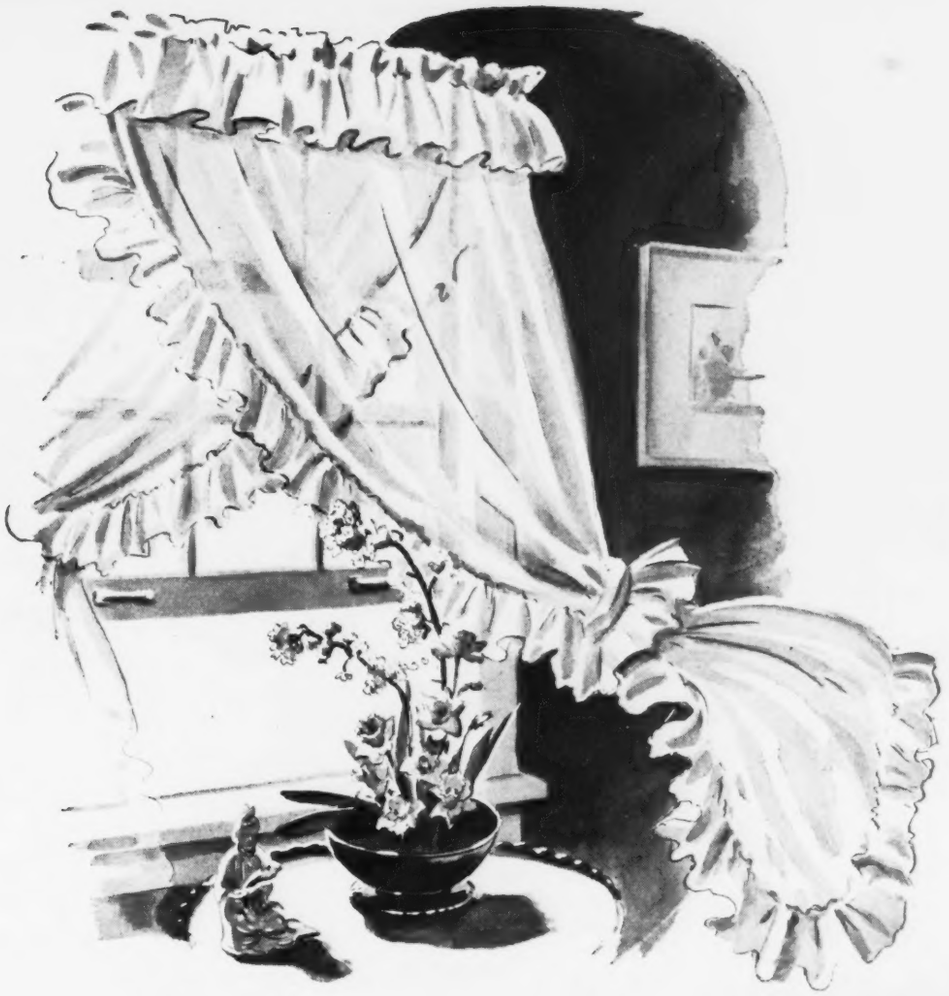
Five Star Army-Navy "E"
July 9, 1945

"He that can have patience can have what he will."

FRANKLIN

Within the limits of material and manpower now available we are working on production of new high-precision READING Machines, designed to develop a new-high standard of quality and quantity production in the knitting of Full-Fashioned Stockings . . . Until such time as we can deliver these new machines to you, we will do our utmost to help you keep your present equipment at highest efficiency.

TEXTILE MACHINE WORKS • READING, PA.



Customers find curtains stay flowerfresh longer if they're protected with DRAX

Sudden showers and dusty breezes don't worry DRAX-treated curtains. Their invisible wax finish protects them from rain and dirt. Curtains stay clean longer . . . so they stay *up* longer . . . need less frequent washings so they *last* longer! All these are benefits customers really appreciate.

You'll find that DRAX gives superior results in use. Tests conducted by an independent laboratory showed that DRAX produced a water-repellency exceeding Army specifications for initial spray rating. It is easy and inexpensive to use and may be applied, not only to cellulose fibres, but to *any* textile.

DRAX is made by the makers of Johnson's Wax. Technically, it is a simple wax emulsion, non-flammable, stays stable in solution. Textile mills already using it find that DRAX adds a profit-plus to the fabric without being difficult or expensive to use. It will pay you to find out about DRAX now.

S. C. JOHNSON & SON, Inc.
Fabric Finishes Division, Racine, Wisconsin
Starrett Lehigh Bldg., 601 W. 26th St., New York 1
Or any of our other 18 district offices
Also S. C. Johnson & Son, Ltd., Brantford, Ont., Can.

This DRAX tag is a sign of plus *value!*

DRAX is made by the makers of Johnson's Wax (a name everyone knows)

POWELL VALVES

for Steam, Oil Water, Gas and Process Lines

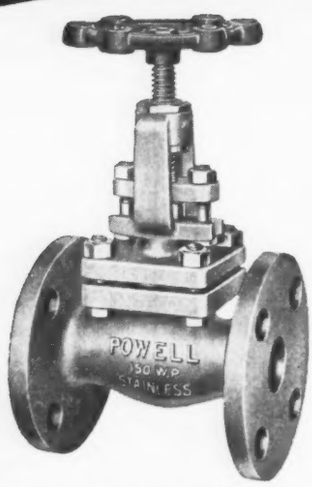
The superiority of Powell Valves is not due to specializing on valves of any particular type or material, but rather it is the result of 100 years of concentrating on making the right valves to satisfy all new requirements for flow control equipment as they have arisen.

That is why today the Complete Powell Line includes valves of *every* type—Globes, Angles, Checks, Gates, Ys, Reliefs, Non-returns, etc.—in Bronze, Iron and Steel (catalogs on request). And for handling practically all known corrosive media, Powell offers a complete line, including Flush Bottom Tank Valves, in a wide variety of Pure Metals and Special Alloys. Write for our booklet "Powell Valves for Corrosion Resistance."

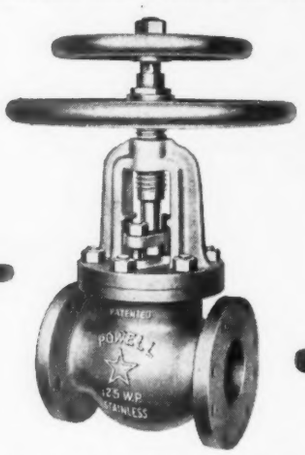
The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

125-pound Iron Body Bronze Mounted O. S. & Y. Gate Valve. Also available in all Iron.



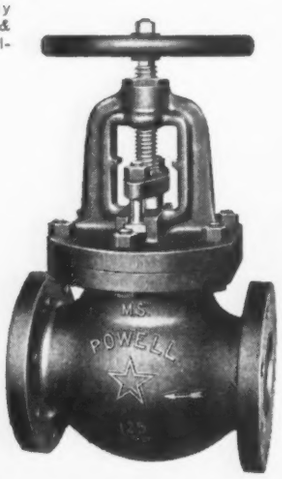
150-pound Stainless Steel O. S. & Y. Globe Valve. Available in many other metals and alloys for corrosion resistance.



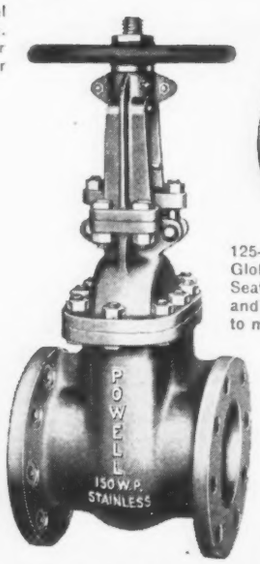
125-pound Stainless Steel O. S. & Y. Globe Valve with Powell Patented Seat Wiping device for keeping seat and disc faces clean, insuring a metal to metal contact.

200-pound Bronze Regrinding Swing Check Valve. Regrindable, renewable bronze disc.

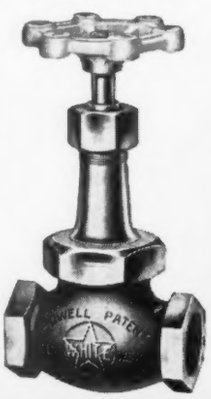
200-pound Bronze Gate Valve with renewable, wear-resisting taper wedge disc.



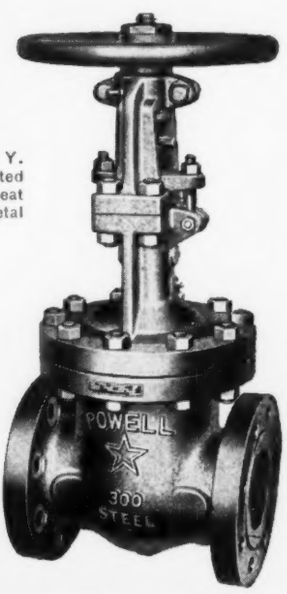
125-pound Iron Body Bronze Mounted O. S. & Y. Globe Valve. Also available in all Iron.



150-pound Stainless Steel O. S. & Y. Gate Valve.



200-pound Bronze Globe Valve with renewable seat and regrindable, renewable wear-resisting semi-cone plug type disc.



Class 300-pound Cast Steel O. S. & Y. Gate Valve.

POWELL VALVES

BUILT BY SPECIALISTS OF LONG EXPERIENCE IN SERVING THE TEXTILE INDUSTRY

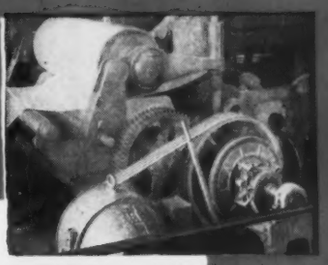
Gilmer BELTS

To meet successfully the textile industry's many belting needs, requires a specialized knowledge that can be gained only through years of close association with each of the several branches of the business. Gilmer engineers have had that experience . . . have gained that knowledge . . . thoroughly understand the textile industry's power transmission problems.

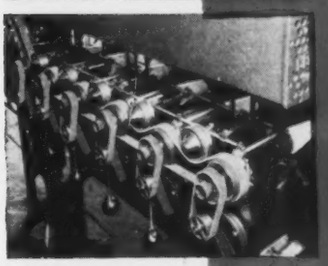
With the result that Gilmer is in a position to supply the *right belt for every textile mill application* from heavy-duty power drives to light, flexible, high-speed operations. Each belt is built specially for the job for which it is recommended. And its extra sturdy construction is assurance of long wear, dependable service and economy.

Whatever your belting problem, you are invited to send it to the Gilmer engineering staff. They gladly offer their services without charge or obligation.

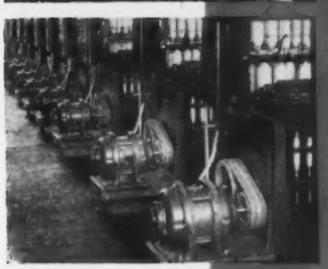
OTHER GILMER BELTS include Endless Round Belts for carding machines, Endless Flat Belts for spinning frames, etc. All are completely described in the handbook, "Gilmer Belts for the Textile Industry"—a book that simplifies the specifying of belts for a large majority of drives. Write for your FREE copy today.



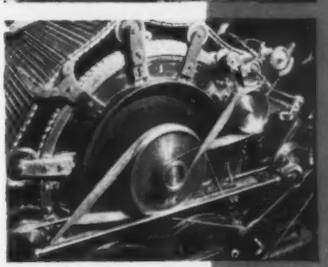
GILMER V-BELTS—FHP and Multiple. Space saving, silent, shock absorbing. Built to lock in the grooves with a non-slip grip. In standard and special sizes.



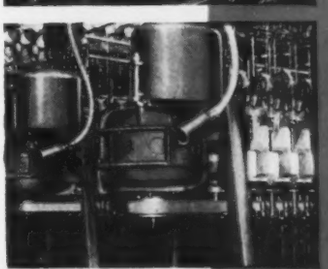
GILMER HEVALOID GAINER BELTS. Made under Hevaloid patent with Neoprene compound, which provides a high coefficient of friction. Resist oil, heat, stretch and slippage.



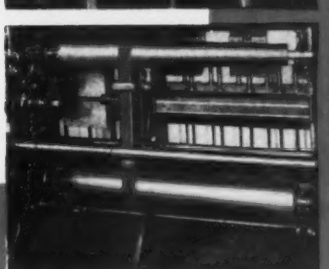
GILMER KABLE KORD BELTS AND BELTING. Meet practically every flat, power belt need. Endless and non-endless, "two-belts-in-one"—contactor and power. Tight gripping, hard pulling, long wearing.



GILMER KABLE KORD LICKERIN BELTS. A contactor and power belt in one. Noted for exceptional grip, low stretch, small slippage and high tensile strength. Stand up long in service.



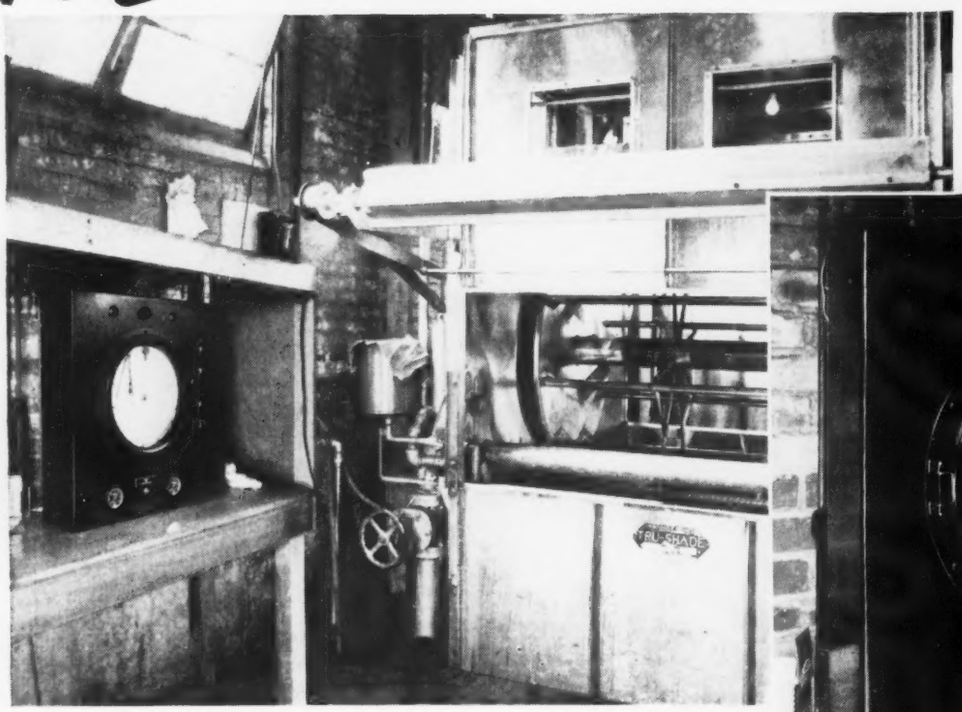
GILMER ENDLESS CORD SPINNER BELTS. Built with continuous cord construction to assure smooth and uniform spindle speed. A belt of high tensile strength, low stretch and long life.



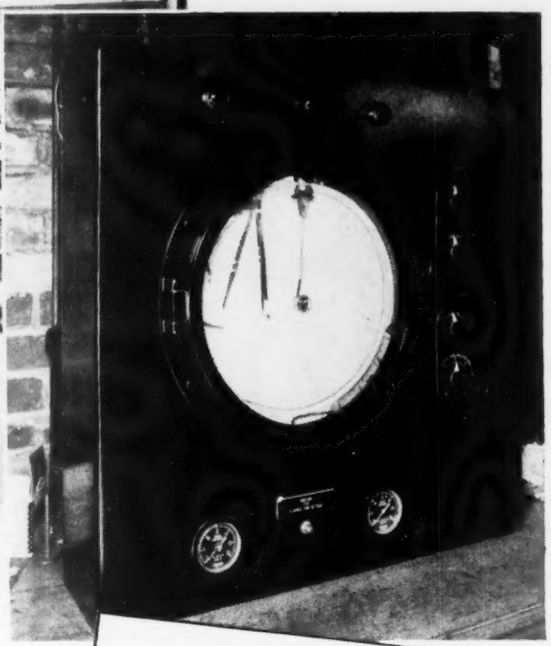
GILMER CONE DRIVE BELTS. Reinforced multiple jacket edges and rubber-locked internal structure check wear and unraveling from the action of shifter forks. Assure longer life in the toughest service.

L. H. GILMER COMPANY
Tacony, Philadelphia 35, Pa.
Division of United States Rubber Company

Now-A BRAND NEW MEANING IN DYE KETTLE CONTROL



Foxboro ***CycleLog*** Controller on piece dye kettle at Woonsocket Falls Mill, Inc., Woonsocket, R. I. Five months' operation has shown consistently outstanding results.



CycleLog Controller adds new principle to give completely predetermined program control

At last you can take all the guesswork – and the headaches – out of color matching! With Foxboro's new ***CycleLog*** Controller you don't even have to guess the time needed to bring a kettle to the boil. You merely set the *rate of rise*, by a simple knob on the panel – and you do it without cams or extra instruments.

Here's how this radically improved new dye kettle controller works, in the words of D. Brophy, boss dyer of Woonsocket Falls Mill, Inc.; "Now we've got ***CycleLog*** Control, I just write the knob settings on the job ticket and then forget it. You always had to worry when you just had a certain length of time to bring the kettle to the boil, because the supply water was never the same twice, and the boils aren't always the same, either. Now we set the Controller to the rate we want it to come up, and that's the same thing summer or winter. You just turn the knob to any rate you want".

Full details of Foxboro's revolutionary new ***CycleLog*** Controller for any type of dye kettle will be sent on request. Write **The Foxboro Company, 84 Neponset Ave., Foxboro, Mass., U.S.A.** Branches in principal cities.

FOXBORO *CycleLog* CONTROL

All you do is turn 4 knobs to desired settings. Then the instrument takes over, and automatically:

1. Raises temperature from the selected starting point to boiling point at specified rate-of-rise (in degrees per minute).
2. Holds boiling temperature constant within 1°F.
3. Accurately times holding period.
4. Shuts off steam and lights signal lamp at end of holding period.

FOXBORO REG. U. S. PAT. OFF. **AUTOMATIC DYE-VAT CONTROL**

BETTER GET WETSIT FOR INSTANT WETTING OUT

• WETSIT wets out faster—at lower concentrations—than any other agent we know. Gives instant, *complete* penetration in all types of textile fibres. Because WETSIT is a concentrated liquid, it's economical, easy to handle and measure, does away with the inconvenience of handling dusty, sneezy powders.

Equally efficient in neutral, acid or alkaline conditions, WETSIT is not affected by calcium and magnesium salts of hard water. It disperses and suspends lime curds formed by soap and makes rinsing easy. WETSIT can save you time and money in every stage of textile processing, in every operation where you want complete penetration—*instantly!*

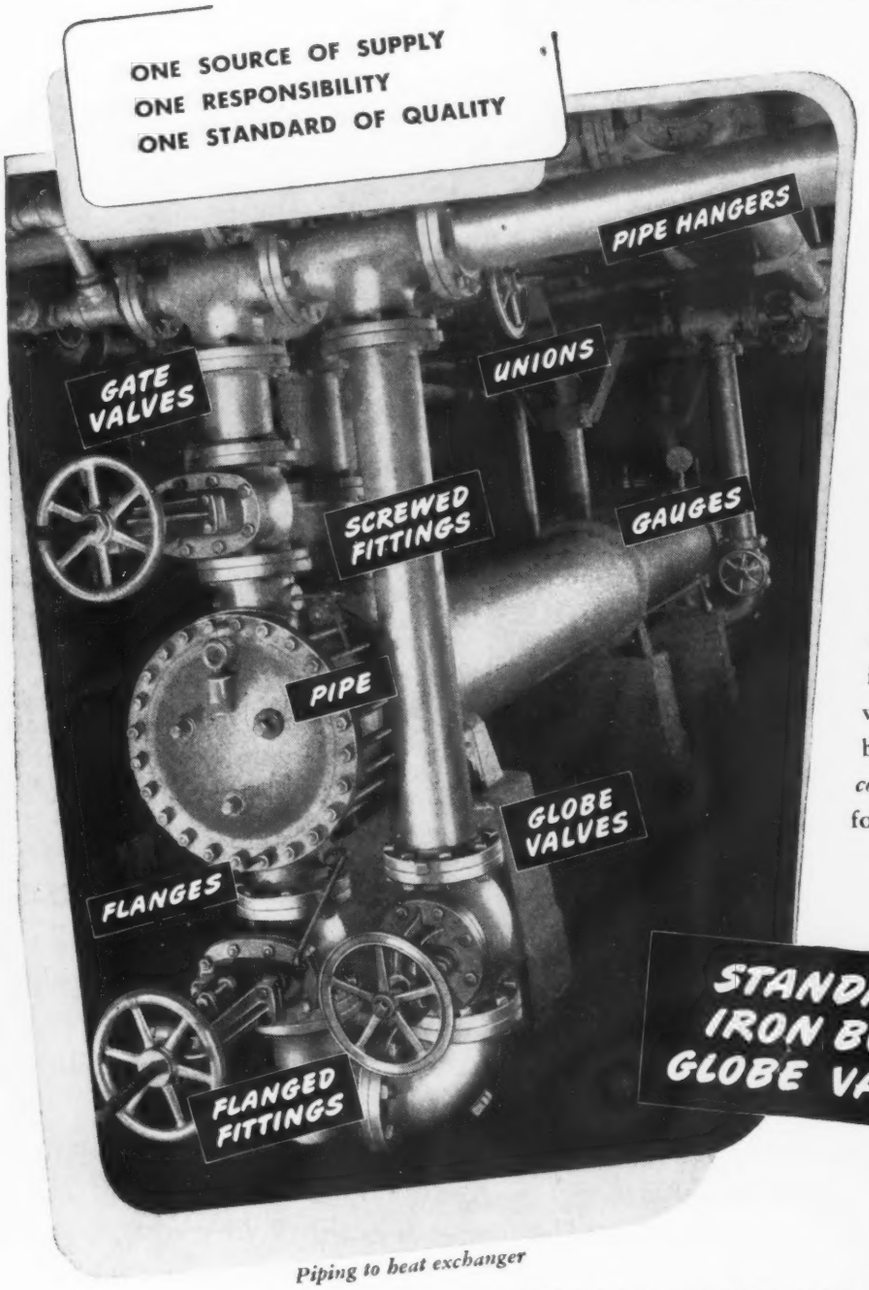
BETTER BECAUSE...

- Faster
- Low Cost
- Completely soluble
- More efficient
- No waste

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.
OTHER PLANTS: CARLSTADT, N. J. • LOS ANGELES, CALIF.
WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Knoxville, Tenn.

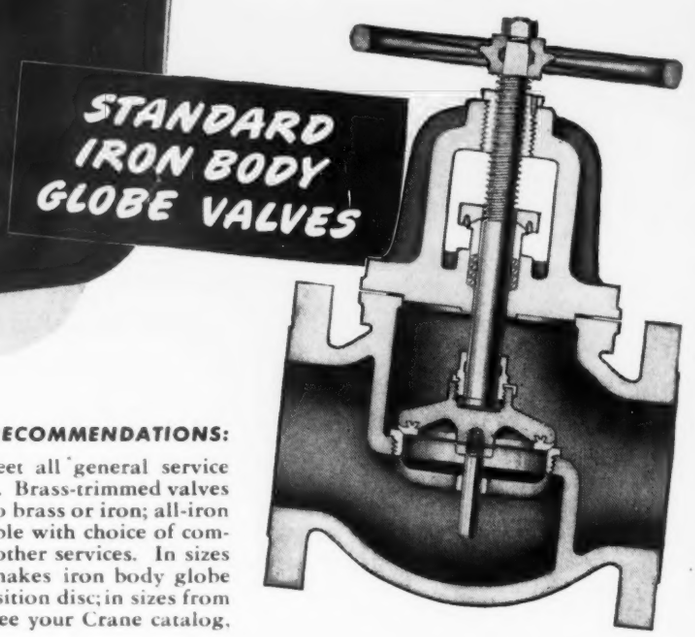
For "User's Choice" of Piping Materials ...it's the Complete CRANE Line



Piping to heat exchanger

Piping systems operate under varying conditions. What conditions should dictate your choice of piping materials, you can best determine. Then Crane helps you meet those specific requirements with the world's largest line of valves, fittings, pipe and piping accessories for all applications. By demonstrating the merits of all types of materials, Crane, with 90 years' experience, enables you to choose correctly for every need.

Ordering from the Crane line simplifies all piping jobs. Your Crane branch or Wholesaler supplies all materials. You're sure to get a better installation and better performance with all parts of uniform quality, backed by single responsibility. This *complete* Crane service is *made-to-order* for your peacetime program.



SERVICE RECOMMENDATIONS:

Crane Standard Iron Body Globe and Angle Valves meet all general service requirements with working pressures up to 125 pounds steam. Brass-trimmed valves are recommended for steam, water, and fluids non-corrosive to brass or iron; all-iron valves for fluids that corrode brass but not iron. Also available with choice of composition discs for steam, hot water, cold water, air, oil, and other services. In sizes from 2 in. up—with screwed or flanged ends. Crane also makes iron body globe and angle valves in all-iron; with brass trim; and with composition disc; in sizes from ¼ to 2 in. Rated at 150 pounds steam, 250 pounds cold. See your Crane catalog, pages 143 to 151.

CRANE CO., General Offices: 836 S. Michigan Ave., Chicago 5, Ill. • *Branches and Wholesalers Serving All Industrial Areas*

CRANE

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

"Improved lubrication with GULF HARMONY OIL *eliminated motor bearing failures and reduced maintenance costs"*

says this Overseer

Actual photo of Overseer of carding (left) consulting with a Gulf Service Engineer on card lubrication.

"BEFORE WE USED Gulf Harmony Oil for electric motor lubrication, as recommended by this Gulf Service Engineer, we occasionally lost a motor bearing through overheating," says this Overseer. "Now we get continuous service from our motors and lower maintenance costs."

To keep costs down and quality up, it is vitally important that every unit of your production equipment gives efficient service. And because lubrication has such a direct bearing on efficiency, more than ordinary attention should be paid to this basic maintenance factor.

For effective help in improving your lubrication practice, call in a Gulf Service Engineer. His thorough training and broad, practical experience with the lubrication of equipment similar to yours can assist you to improve production and reduce maintenance costs. Write, wire, or phone your nearest Gulf office today.

GULF INDUSTRIAL LUBRICATION

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Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
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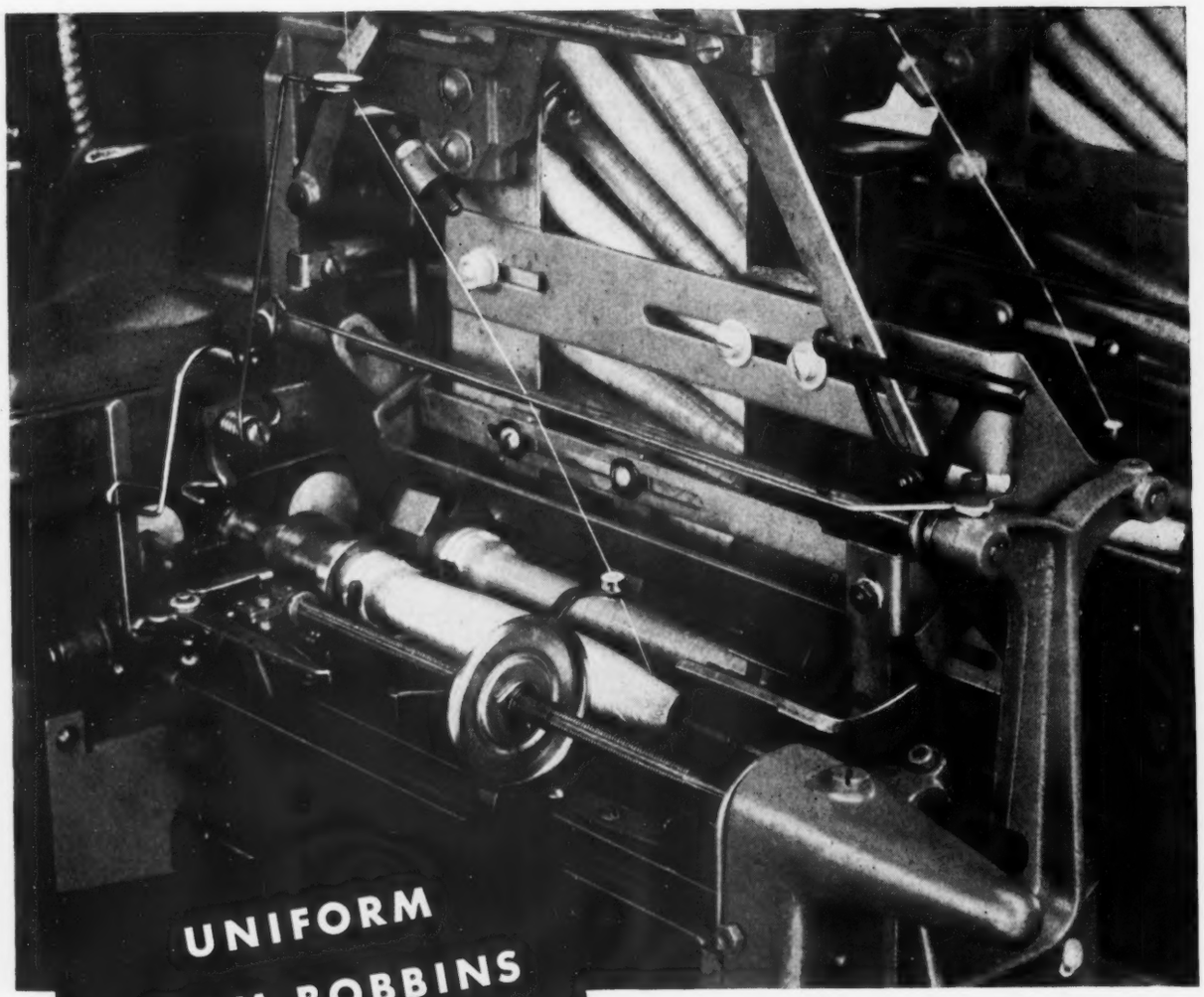


UNIFORM LOOM BOBBINS OF HIGHEST QUALITY

because of Universal's proven bobbin-building method

In making the No. 99 Winding Machine automatic, Universal engineers preserved those features of the No. 90 machine which are responsible for the winding of top-quality bobbins. New controls have been established to protect yarn at high speed.

For instance, the same Universal Traverse Wheel is used. It produces bobbins that are round, parallel-sided, and free from ridges that cause plucks.

LOOK FOR ALL 3 IN CONSIDERING AN AUTOMATIC MACHINE

A proven bobbin-building method—gives uniform bobbins.

Positive spindle drive—you get all the production you expect.

Electrical controls combined with mechanical controls to simplify design.

Universal Winding Company, Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta.

UNIVERSAL AUTOMATIC

High Speed Bobbin Winding Machine

LEESONA

23-5-6

. . . Putting Electricity to Work to Improve Your Bobbin Winding

INCENTIVES FURNISH THE DRIVE

THE COMING YEAR, 1946, and the years to follow can bring unprecedented prosperity to the people of the United States if the incentives to secure it are provided.

We have the advantage of starting with an economy which has demonstrated a capacity for expansion unequalled in any other country in the world. Our economy has demonstrated, also, one grave weakness—a recurring interruption of the upward trend of production and living standards by wasteful and paralyzing periods of recession. Recovery from each depression always has carried us to new heights of economic welfare, but the toll of the years of blight has been harmful to everyone.

The job ahead of us is a dual one. We must maintain the vitality of an economy which, over the years, has yielded an enormous increase in the American standard of living, and we also must improve its stability.

The Dynamics of American Production

In the last prewar year, 1940, the population of the United States was 3⅓ times as large as it was in 1870. But the national production, measured in dollars of constant purchasing power, was 10 times as large at the end of the period, and industrial output had increased 20-fold.

In the meantime, the average number of hours of factory workers had been reduced from about 63 per week in 1870 to less than 40 in 1940, while average hourly earnings had more than trebled in dollars of constant purchasing power. Thus "real" weekly or annual wages in manufacturing had doubled over the 70-year period, even though the work-week was cut by 35 per cent. This was made possible chiefly by a tremendous increase in the quantity and quality of the mechanical facilities which were provided in American manufacturing industry. Manufacturing capital investment per worker was multiplied by 6 times over the period in question. But the return per dollar invested, while it has fluctuated widely between good years and bad, showed no general upward trend over that portion of the period for which measurement is practicable.

Incentives in American Manufacturing

There has been, historically, a remarkably consistent pattern in the division of the realized income from the expanding manufacturing output of America. Reliable statistics are not available for as far back as 1870, but from 1899 through 1939 the average share of wages and salaries has been 82½ per cent against 17½ per cent as the share to investors (including dividends, interest, rents, royalties, and non-corporate profits). There have been, from year to year, relatively minor divergences from this pattern of distribution, but there is no discernible trend during the period away from the averages cited.

It is suggested that the persistence of the average 17½ per cent share of realized income from manufacturing that was maintained for the 40 years preceding World War II may represent the proportion that is needed to produce the dividends, interest, rents, royalties, and non-corporate return that will provide for the continuing investment upon which an expanding productivity such as we have had in the past depends. At any rate, it would seem reckless to depart too radically from such an established pattern at a time when unprecedentedly large private capital investment is counted on to make up for the drastic curtailment of such investment during the war years, and to carry us to the new high levels of civilian production set as our postwar goals.

The Distribution of Manufacturing Income in War

At the beginning of the war, the Government adopted controls and a tax program designed to prevent wartime activity from resulting in un-

duly swollen private returns. Due primarily to huge volumes, the profits *before* taxes of manufacturing industry were very high, but throughout the war its profits *after* taxes averaged returns no larger than they had been in good prewar years. Relative to volume, they were considerably lower than in prosperous years in the past. Again, there can be no complaint at results that generally were in accord with a national wartime policy.

But it is fair to note that the wages of manufacturing labor were allowed to increase substantially during the war. Between January 1, 1941 and April, 1945, average weekly earnings per worker increased by 77 per cent. This was, in considerable part, a result of increased working hours and a shift from low- to high-paid industries, but straight-time hourly earnings on the same jobs increased about 40 per cent against a cost-of-living rise of about 30 per cent.

The net result was to alter drastically the 40-year relationship of the 17½-82½ per cent division of Realized Income from Manufacturing. The share of wages and salaries increased to over 90 per cent, and the investment share shrunk to less than 10 per cent.

Its Postwar Distribution

This wartime shift in the proportion of distributive shares has an important bearing upon current wage controveries. With union demands for wage increases ranging up to 30 per cent, and the economists of the Office of War Mobilization and Reconversion asserting that an average increase of 24 per cent is feasible without raising prices, it is pertinent to inquire how such increases would affect the prewar ratios that governed realized income distribution in manufacturing.

Forecasting is always hazardous, but if we assume (1) that in 1946 we shall reach the $160 billion level of national output which the Government proponents of general wage increases expect, and (2) that there will be little increase in productivity because of the continuing process of reconversion, and (3) that the Government will succeed in carrying its announced purpose to maintain present price ceilings, it appears that a 24 per cent general wage increase would reduce the share going to capital from 17½ per cent to 11 per cent even allowing for its increased return resulting from the repeal of the excess profits tax. The prewar ratios would be about maintained if wages remained at present levels.

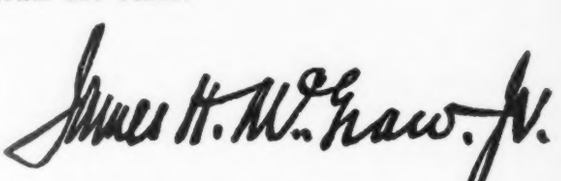
Conclusion

Since the maintenance of these prewar ratios was accompanied by an unparalleled rise in the "real wage" of American workers, there is a powerful prima facie case for not tinkering with them. It should be noted, however, that some economists think that the size of the investment share of manufacturing income tends to provide more capital than can be absorbed by a mature economy, and thus contributes to those breaks in the expansion of the economy which, as stated at the outset, have been its principal blight.

Regardless of what may ultimately prove to be the validity of this view, no one can responsibly contend that at this early but crucial stage in the reconversion process is the time to test it. Now, no one knows whether, or what dimension of, additional wage increases can be supported without forcing up prices or reducing profits to a point that will discourage vitally needed private capital investment.

We want high and increasing wages in American manufacturing. We need them to provide an active incentive to workers to support expanding productivity, as well as to continue the trend of rising living standards in America. Equally, we need a continuing profit incentive of sufficient attractiveness to call forth the new investment upon which expanding productivity depends.

We can never attain our dual objective if we push one of these aims so far and so fast that it defeats the other.



President, McGraw-Hill Publishing Co., Inc.

TEXTILE WORLD

Volume 96, Number 1.....January, 1946

Patented ENEMY TECHNOLOGY Now Available to American Mills

HIGHLIGHTS: *U. S. textile mills now may use under licensing arrangement foreign textile patents held by Alien Property Custodian—Reproductions of outstanding German textile books and reprints of textile magazines also available.*

BENEFITS OF GERMAN RESEACH in textile machinery, fiber processing, fabrics, and dyes made before the war are now available to the textile mills of this country.

Recent textile-team reports, presented by investigators sent to Germany by the Office of the Quartermaster General under the auspices of the Combined Intelligence Objectives Subcommittee, have indicated the finding of extensive improvements in textile machinery, as evidenced at the experimental plant at Denkendorf.

While many of the developments in textile equipment reported were made after the beginning of World War II and consequently not patented in this country, others represented were developed prior to the war and some of these were patented in the United States. Those German textile patents registered in the U. S. and not exclusively licensed to American interests prior to vesting are being licensed to U. S. citizens on a non-exclusive, royalty-free basis for the life of the patent. This also applies to Japanese patents registered in this country, but only a few have been taken out.

ENEMY-OWNED TEXTILE PATENTS. Many enemy patents held by the Office of Alien Property Custodian, Division of Patent Administration, are available for license to U. S. citizens for a fee of $15 per patent. Some 33,000 patents and patent applications in all are held by the Alien Property Custodian, of which over 1,400 are textile patents and about 900 cover chemical processing of textiles. The major textile patent classes are abstracted as listed in Table I. Class number for ordering, number of patents listed, and price of class abstract are given.

Any mill interested in obtaining abstracts may order them from Alien Property Custodian, Field Building, Chicago 3, Ill. Printed copies of all vested patents may be examined at the APC patent libraries listed in Table II. A complete catalog of patents vested in the APC may also be examined at the district offices of the Smaller War Plants Corp., located in over 100 cities, and also at many Chambers of Commerce and in public libraries of many cities.

BREAKDOWN OF PATENTS. All of the patents listed are not available for licensing because some are held by nationals of countries that were overrun but not at war with the Allies, while others had been granted to American interests before the war. Out of the 33,000 patents held, perhaps 22,000 are free of claims of interests of Americans and can, therefore, be regarded as licenseable.

Of the textile patents listed, a breakdown of some of the machine and chemical processes covered may prove valuable. Practically all of the textile patents held deal with these two broad classifications.

For example, the abstracts of Textile Weaving, Class 139, patents cover 275 patents on looms, circular looms, shuttles, loom parts, and some weaves and fabrics. Of these 275, about 40 patents cover fabric constructions, 15 cover shuttles, and over 20 pertain to circular looms.

The 235 patents in Fiber Preparation, Class 19, may be broken down to 13 dealing with cards, 17 covering combs, and 57 relating to drawing rolls and drafting systems.

In the chemical abstracts, Section 25, Natural and Synthetic Fibers, 26 pages are devoted to over 120 patents on natural fiber processes and products, whereas the 39 pages on artificial fibers and processes are devoted to over 175 patents.

Following is a breakdown of duplication in licensing, as presented by H. H. Sargeant, chief Division of Patent Administration, Office of Alien Property Custodian, on Oct. 19, 1945, before the Senate Military Affairs Committee.

According to Mr. Sargeant, "We have licensed more than 10,000 patents in 1,700 separate licenses. Our non-exclu-

sive licensing policy was designed to permit equal access for all to the inventions disclosed in the patents vested by the Custodian. In actual practice, we have found that 1,771 patents have been licensed two or more times. Since we have licensed 7,364 separate patents, this means that one out of every four patents licensed by the Custodian has been made available to two or more firms.

"An analysis was made of 504 reports received from licensees as of Dec. 31, 1944 and covering 7,508 patents. Ninety-five percent of the patents licensed and reported upon were licensed to firms in 11 states, with the largest numbers in Massachusetts, Ohio, and New York. The reports indicate that research work had been done on about 1,100 patents during 1944, and many licensees indicated that they intended future research on the patents included in their licenses. It is significant in my opinion that reports from groups of smaller companies; i.e., companies with less than $1,000,000 assets, indicate that about 50% of the patents licensed to them were actually used in production or were the subject of research during 1944. Reports by larger firms indicate that at least 25% of the patents under which they had licenses were actually used in production or were the subject of research."

In a report covering the activities of the APC as of June 30, 1943, among the licenses granted to textile companies appeared the names of such outstanding textile companies as American Enka Corp., Aralac, Inc., Phoenix Hosiery Co., Miller-Smith Hosiery Mills, North American Rayon Corp.; and such textile machine companies as James Hunter Machine Co. and Whitin Machine Works.

HOW TO GET A LICENSE. Any person

SELECTED DIGESTS SHOW EXAMPLES

1,976,631

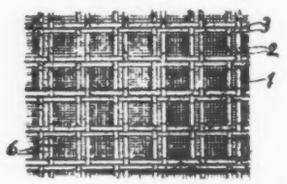
STUFF FOR GARMENTS

Heinrich Pferdmenges, Giesenkirchen, near Rheydt, Germany

Application May 22, 1933, Serial No. 672, 322

In Germany August 15, 1931

2 Claims. (Cl. 139-413)



1. A stuff for the manufacture of cloth or underwear, especially suitable for open air, summer, or sporting garments or underwear, comprising a double texture the inner of which has thick warp and weft threads arranged in pairs so as to provide wide meshes while the outer texture consists of thin threads which are of such density that the whole structure is practically non-transparent but is permeable for the rays of the sun or the air.

1,994,313

SPINNING PROCESS

Gustav Jacobs, Rheydt, Germany

No Drawing. Application April 3, 1933, Serial No. 664,285. In Germany April 9, 1932

2 Claims. (Cl. 19-65)

1. A process of producing worsted yarn from a mixture of long and medium-stapled sheep's wool, consisting in carding the wool, doubling and stretching the resulting slivers, combing the slivers, subjecting the product thus obtained to three stretching operations by passing it from one set of stretching rollers immediately into another set without heckling or gilling, subjecting the slubbing thus obtained to about two stretching and twisting operations, and finally to a fine spinning operation.

2,097,234

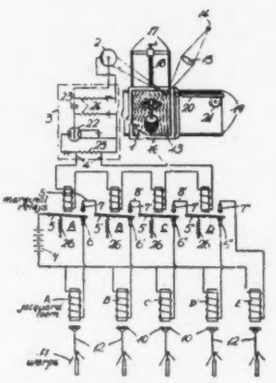
PHOTOELECTRIC SELECTING SYSTEM

Kinsaku Nakanishi, Hakata, Fukuoka, Japan, assignor of one-half to Kinjiro Nakanishi, Fukuoka, Japan.

Application April 3, 1933, Serial No. 664, 277

In Japan April 12, 1932

3 Claims. (Cl. 139-319)



3. In a system for photoelectric selection, the combination of a standard picture drawn in different depth of basic color to correspond with a colorful design to be put on a cloth, a light projecting means consisting of a light source and a lense for projecting the scanning light on said picture, a photoelectric tube arranged to receive light from every point of said standard picture, means for moving said standard picture to one direction at the constant speed and cross-wise thereto by one pitch in the plane of said standard picture after the first mentioned movement is over, an amplifier of the photoelectric current connected to the output circuit of said photoelectric tube, a plurality of relays having successively varying current ratings connected in series with each other and in the output circuit of said amplifier, an armature of each of said relays being connected to a normally open contact of the adjacent relay of lower current rating, and a plurality of electromagnets, one terminal of every operating coil of which being connected to a normally closed contact of said relay with the exception that one terminal of the last electromagnet coil is connected to a normally open contact of the last relay, and the other terminals of all the electromagnet coils being connected to one terminal of an electric source, the other terminals of which

interested in a patent described in the abstracts should first obtain a copy of the individual patent which contains the complete disclosures and claims of the inventor. These may be purchased only through the Commissioner of Patents, United States Patent Office, Washington 25, D. C., for the sum of 10¢ per copy.

If the person or the mill then, after a careful study of the patent, decides to apply for a license, a letter of application is sent to the Office of Alien Property Custodian, Washington 25, D. C., along with $15 to cover the license fee. All patent licenses now being issued are on a royalty-free basis.

The letter of application should contain the following information:

1. (a) Your name and business address; (b) legal form of the business (corporation, partnership, sole proprietorship, etc.); (c) if a corporation, the state in which incorporated; (d) trade name, if used by either a partnership or proprietorship; (e) nature of the business, such as manufacturer, distributor, retailer, etc. (specify principal lines handled); (f) name, citizenship, and legal residence of the corporate officers and directors, or of the partners, or of the proprietor, as the case may be; (g) if a corporation, the approximate percentage of voting stock owned by or for the benefit of non-citizens of the United States, or the percentage of shares subject to withholding tax on dividends to non-resident aliens; (h) size of your business according to total assets; e.g., "Under $250,000," "$250,000 to $500,000," "$500,000 to $1,000,000," "$1,000,000 to $5,000,000," "$5,000,000 to $10,000,000," "Over $10,000,000."

2. A list of the specific patents or patent applications under which you seek a license, as well as the purpose or purposes for which the license is de-

OF TEXTILE PATENTS AVAILABLE

being connected to the armature of the first relay so as to connect said electromagnet coils in parallel with each other in the circuit of said electric source, the armature of said electromagnet having a hook which holds a warp arranged in a brocade loom to be woven into a cloth so that the photoelectric current produced corresponding to the brightness of every scanning point of said standard picture may be utilized to selectively operate the electromagnet corresponding to the relay of the maximum rating at the predetermined photoelectric current by the cooperation of contacts of said relays of lower rating, thereby picking up the armature with the said selecting elements periodically with a predetermined relation to the scanning operation of the original picture.

2,144,151

METHOD AND APPARATUS FOR SHRINKING WOVEN OR KNITTED TEXTILE FABRICS

Andreas Heinen, Cologne, Germany
Application October 5, 1934, Serial No. 747,007
In Germany October 6, 1933
6 Claims. (Cl. 26-18.5)

1. Method of shrinking woven or knitted textile fabrics comprising applying the fabric to the surface of a traveling support, subjecting the fabric on the support to the action of air pressure for causing it to adhere to support surface, imparting to this support an advance movement at a predetermined speed, transferring the fabric from the said support to another support spaced from but in close succession to the former, subjecting the fabric on the last-said support to the action of air pressure higher than that used on the first-said support for causing the fabric to be affixed to the surface of the last-said support more firmly than to the first-said support, imparting to the last-said support an advance movement at a speed lower than that of the first-said support, thereby to produce a compression of the fabric parallel to its surfaces in the gap between the two supports.

2,234,363

PROCESS OF IMPREGNATING FIBROUS MATERIAL AND THE MATERIAL THUS OBTAINED

Arnold Brunner and Georg von Finck (I. G. Farben).
March 11, 1941.

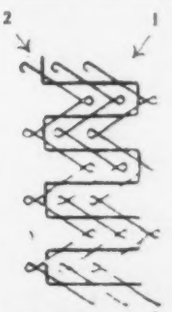
Fibrous materials are made water-repellent by impregnating with the reaction product of a phenol having at least one 4-carbon side chain, HCHO, and hydrogen chloride. The chloromethyl phenol is further reacted with a tertiary amine.

Example: The pyridinium compd. obtained from a chloromethylated commercial mixture of isododecyl-, isotridecyl- and isotetradecylphenol is dissolved in water (concen. 1%). Cotton fabric is impregnated with this solution, dried at 110°C. and subsequently washed with soap and Na_2Co_3. The material is water-repellent.

2,149,032

PRODUCTION OF PLAIN WARP GOODS

Paul Schönfeld, Chemnitz, Germany
Application April 15, 1938, Serial No. 202,154
In Germany February 23, 1938
3 Claims. (Cl. 66-84)



1. A method of producing plain knited warp goods wholly or partially provided with rubber warp threads by means of a lower machine for the ground thread and an upper machine for the rubber thread, consisting in causing the lower machine to lap at least under 2, as under 2 over 1 and back, and the upper machine to carry out underlying operations which are different in size from those of the lower machine and to be racked in the course of the underlying operations always in the same direction as the lower machine.

Table I—Groups of Textile Patent Abstracts Available

Class No.	Title	No. Patents	Class Abstract Price
8	Bleaching and Dyeing	223	10¢
19	Textiles, Fiber Preparation	235	10¢
26	Textiles, Cloth Finishing	39	10¢
28	Textiles	63	10¢
57	Textiles, Spinning, Twisting, and Twining	183	10¢
66	Textiles, Knitting	346	25¢
68	Textiles, Fluid-Treating Apparatus	91	10¢
87	Textiles, Braiding, Netting, or Lace Making	....	10¢
139	Textiles, Weaving	275	25¢
Sections	**Chemical Abstracts**		
23	Plastics, Synthetic Resins, Plasticizers, Solvents	124 pages	$1.00
25	Textiles, Natural and Synthetic Fibers	65 pages	1.00
26	Dyes, Dyeing Processes, and Textile Chemicals	63 pages	1.00

sired; e.g., (a) postwar production; (b) research or further development; (c) protection from possible infringement of the patents for which the license is requested; and (d) other reasons (explained in detail).

3. A statement as to whether you have ever been licensed or whether you claim any other interest under the specified patents.

TEXTILE PATENTS AVAILABLE. Among some of the interesting patents offered to textile mill-men are two covering the preparation of a wax-composition water repellent, as covered by patents Nos. 2,015,864 and 2,015,865. Considerable interest has been expressed in these patents as they have already been used for several years for cotton fabrics. It is stated that the principle of these processes is based on the fact that most fabrics have a negative charge and that a positively charged emulsion in weak solution will render the fabric more water repellent.

Another group of interesting patents, many of which are licensable, are those held by Antonio Ferretti. The Ferretti patents, better known as those covering Lanital, the Italian casein fiber, created extensive interest in this country several years ago when the fiber was first introduced in this country and at that time many organizations experimented with and considered the possibilities of producing Lanital domestically.

Textile mills will find that those patents covering fabric coatings, finishes, processing methods, and fabric constructions offer possibilities. A number of these are illustrated as typical examples.

Table II—Alien Property Custodian Patent Libraries

Washington 25, D. C.
National Press Bldg.
14th and F Streets

Chicago 3, Ill.
Field Bldg.
135 S. LaSalle Street

New York 5, N. Y.
120 Broadway

Portland 8, Ore.
301 Guardian Bldg.

Boston 8, Mass.
1 Court Street

ALIEN PUBLICATIONS. Another function of the APC is to make available outstanding technical books and scientific periodicals to publishing firms with the understanding that reprints be offered at a reasonable price. A number of the book reproductions are as follows with the author listed first, then the name of the book, location of publisher, the publisher, number of pages, price, and where book may be ordered:

KURT GOTZE
Kunstseide und Zellwoole nach dem Viskose-Verfahren. Berlin, Springer, 1940.
xi, 644 p.
Subject: *Viscosity; Cellulose; Silk, Artificial; Wool, Artificial.*
Original price: $23.20. Reproduction: $20.00
Licensee: J. W. Edwards, Publisher Edwards Bros., Inc., Ann Arbor, Mich.

HEERMAN, PAUL
Farberei und textilschemische Untersuchungen; Anleitung zur chemischen und koloristischen Untersuchung und Bewertung der Rohstoffe der Textilveredlungsindustrie. 7., neubearb. Aufl. Berlin, Springer, 1940.
vii, 419 p. illus.
Subject: *Textile industry and fabrics.*
Original price: $9.60. Reproduction: $8.20.
Licensee: J. W. Edwards.

HETZER, JOSEF
Textil-Hilfsmittel-Tabellen (Insbesondere Schauin-, Wasch-, Reinigungs-, Dispergier- usw.-Mittel) 2., erweit. Aufl. Berlin, Springer, 1938.
iv, 327 p.
Subject: *Textile industry and fabrics.*
Original price: $9.60. Reproduction: $7.00.
Licensee: J. W. Edwards

POSCHL, VICTOR
Deutsche Werkstoffe. Stuttgart, Enke, 1942.
xii, 233 p.
Subject: *Building materials; Chemistry, Technical; Textile fibers.*
Original price: $5.60. Reproduction: $5.60.
Licensee: J. W. Edwards.

WEYRICH, PAUL
Das Farben und Bleichen der Textilfasern in Apparaten.
Berlin, Springer, 1937.
viii, 347 p.
Subject: *Dyes and dyeing; Textile fibers.*
Original price: $15.50. Reproduction: $11.50.
Licensee: J. W. Edwards.

CHWALA, AUGUST
Textilhilfsmittel; ihre Chemie, Kolloidchemie und Anwendung.
Wien, Springer, 1939.
xiv, 475 p. illus., tables, diagrs.
Subject: *Textile chemistry.*
Original price: $18.00. Reproduction: $7.75.
Licensee: J. W. Edwards.

MECHEELS, OTTO
Praktikum der Textilveredlung; Verfahren, Untersuchungs-methoden, Anleitungen zu Versuchen. Berlin, Springer, 1940.
xvi, 380 p.
Subject: *Textile finishing; Textile chemistry.*
Original price: $10.30. Reproduction: $8.00.
Licensee: J. W. Edwards.

Textile magazines, reprints, available are as follows:

Melliand Textile Reports (Melliand textilberichte)

Synthetic Wool and Artificial Silk
Combined edition of the periodicals
"Jentgen's Artificial Silk and Synthetic Wool" and
"Synthetic Wool, Artificial Silk, and Silk."
(Zellwolle und kunstseide.
Berlin
Gemeinschaftsausgabe der zeitschriften
"Jentgen's Kunsteide und zellwolle." und
"Zellwolle, kunstseide, seide."

The above journal reprints should be ordered from F. W. Faxton Co., 83 Francis St., Back Bay, Boston 15, or from G. E. Steckert & Co., 31 East Tenth St., New York 3.

C. W. BENDIGO *Appointed* Editor *of* TEXTILE WORLD

Dear Readers:

In 1943 I found it necessary to assume temporarily the duties of editor-in-chief, in addition to my regular duties as publisher. The increased burden of work was to continue only as long as might be required to inaugurate certain changes, instruct an editorial staff on new objectives, and find a potential chief editor capable of carrying on the job.

I am happy to report that the goals have been reached. C. W. Bendigo, as executive editor, has qualified in all particulars for the responsible position to be filled; and, with pleasure and full confidence, I have appointed him, effective with this issue, editor-in-chief of TEXTILE WORLD.

Ben, as he is affectionately called around the office here and in many other places in the textile industry, was born in Tower City, Pa., April 27, 1911, a son of E. I. Bendigo, now superintendent of Grabur Silk Mills, Burlington, N. C. He attended Ursinus College and later the University of North Carolina, where he completed a course in journalism. After a brief experience as newspaper reporter in Greensboro, N. C., he became connected with the Adams-Millis Corp., High Point, N. C., and later joined Glen Raven Silk Mills, Burlington, N. C., as assistant superintendent of that plant.

In 1935 he took a position with Burlington Mills, Mooresville, N. C., first as throwster on crepes, later as assistant technician, and finally as superintendent of its largest combination-yarn plant. In 1940 he went to Judson Mills, forming its technical and engineering department with the title of superintendent of research. While at Judson, he coordinated a similar department at Laurens Cotton Mills and was technical advisor to Abbeville Mills.

During most of his mill life, C. W. Bendigo was a regular contributor to the columns of TEXTILE WORLD; and through his writings he became well known to many readers. Just two years ago he joined the staff in New York as assistant editor; and he was appointed executive editor on January 1, 1945.

Ben spends the major part of his off time in and around his pleasant home in Port Washington, Long Island, where resides an interesting family, including an energetic wife, active in community affairs, and two charming little girls. He can occasionally be persuaded, however, to go off for a day or two on some sporting expedition which involves the use of either rod or gun. One of his chief outside interests is aviation. In the past he has piloted his own plane over many a broad landscape; and, during a considerable part of the war, he was active in the Civil Air Patrol. Mrs. Bendigo shares many of these interests with him, and she too served in the Civil Air Patrol.

The new TEXTILE WORLD policies which so many of you have been endorsing through congratulatory letters, increasing subscriptions, and a constantly stronger renewal tendency will be continued under the new editor. In fact I am sure that you will constantly find our columns growing more interesting and also more serviceable to you in your jobs.

The new editor-in-chief will be backed by a strong staff whose splendid work is already well known to you—including such editors as William B. Dall and Prentice M. Thomas, in New York; Earle Mauldin, in Atlanta; C. Mallard Bowden, in Charlotte; C. Norris Rabold, in Greenville; Howard S. Knowlton, in Boston; and Gladys T. Montgomery, in Washington. Plans are on foot to enlarge further our staff of editorial consultants, several of whom are shortly to be elevated to consulting editors in order that they may take a more active part in formulating editorial policies and programs.

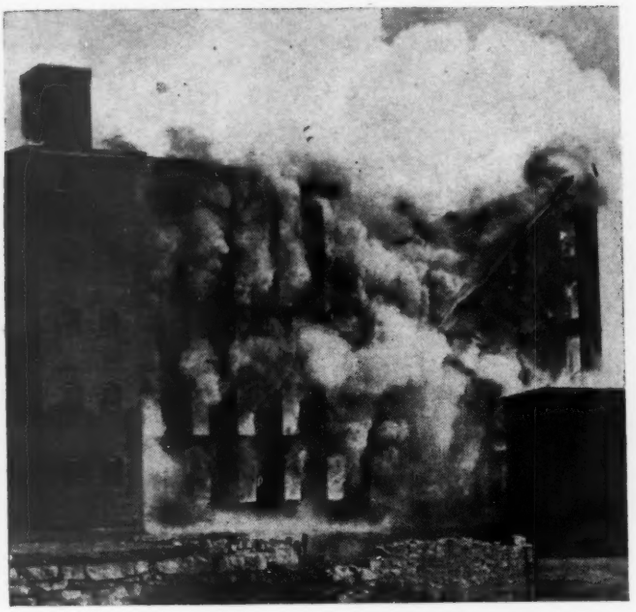
If it is possible that some readers are concerned over whether I shall continue to take an active interest in editorial affairs, let me earnestly assure them that my early and long experience in editorial work, my liking for it, and my firm conviction that editorial content is the heart of any publishing enterprise will influence me always to place the maintenance of a strong editorial staff, policy, and content in the top bracket of my interests. Furthermore, I doubt that I can resist for long the temptation to write occasionally for the editorial columns. In consequence, there is no possibility at all, dear readers, that you will miss me; and therefore this letter cannot be assumed to be, in any way, a farewell to you.

Cordially yours,

Edwin D. Fowle

PUBLISHER

Insurance Companies Analyze MILL FIRE EXPECTANCY



HIGHLIGHTS: *More than 200 Southern mills cooperate in study of fire causes in cotton mills—Associated Factory Mutual Fire Insurance Co. recommends operating loads and speeds for several machines—Seven percent of the mills use magnetic separators; six percent have humidified opening and picking departments—Progress in fire-loss prevention slow in textile industry.*

By W. E. PETERSON

THE LOSS BY FIRE in the average cotton mill is about equally divided between three parts of the mill: storage areas, opener and picker rooms, and the remainder of the mill. Few fires occur in cotton storage warehouses, but the total amount of loss resulting from them is excessive. About one-half the total number of fires in the mill occur in the opener and picker rooms, and they account for one-third of the amount of loss. Only a small number of fires, resulting in moderate losses, occur in the remainder of the mill.

This record of cotton mill fire losses pointed the way to a fire-prevention study of machinery, methods, and machine layouts in opener and picker rooms by engineers of the Charlotte Regional Office of the Factory Mutual Fire Insurance Co., in cooperation with Southern cotton mills. The results from surveys of 212 mills, having 7,380,000 spindles, were compiled into report form by the writer. The study increases considerably the technical knowledge of fire causes and prevention, and it also indicates that fire-loss prevention has not progressed as rapidly in the textile industry as in other manufacturing industries. This slow progress is due to the lack of preventive-engineering facts and to the complexity of the industry itself insofar as the task of accurate fact-finding is concerned.

This is the first of a series of articles based on the report of the Associated Factory Mutual Fire Insurance Co.—Editor.

BREAKERS AND FEEDERS. The first machines to receive attention in the survey were bale breakers and blending feeders. The average load of the blending feeder in the mills studied was 280 lb. per hr. and that of the bale breaker was 766 lb. per hr. These machines were found to be relatively free of fires, which fact was largely attributed to the low speed at which they are usually run; but fires do occur in them when cotton becomes wrapped around a shaft and chokes a bearing. It was indicated, too, that blending feeders should not be overloaded. Two-thirds hopper capacity was normally considered a safe maximum load.

Sixty-two percent of the mills covered by the survey used vertical openers. In the majority of them, the opener

Fig. 1. Factory Mutual engineers O. F. Davenport, left, and W. E. Peterson study charts of fire causes.

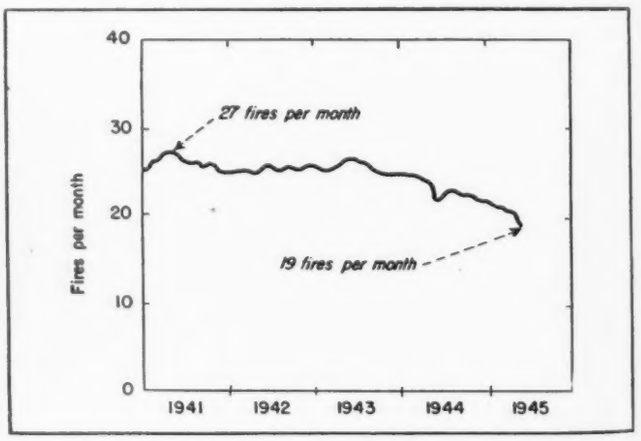


Fig. 2. A chart of the number of fire losses per month shows a considerable improvement since the fire-prevention study began in 1942.

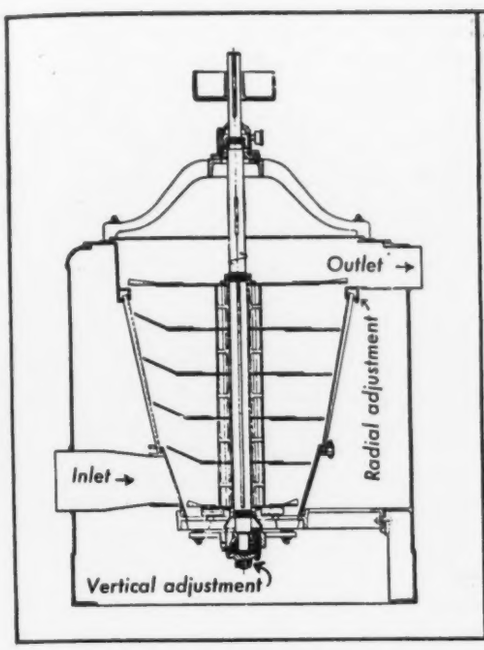


Fig. 3. The position of the vertical opener in the opening line was found to be of greater importance in reducing fires than was the speed at which it was run.

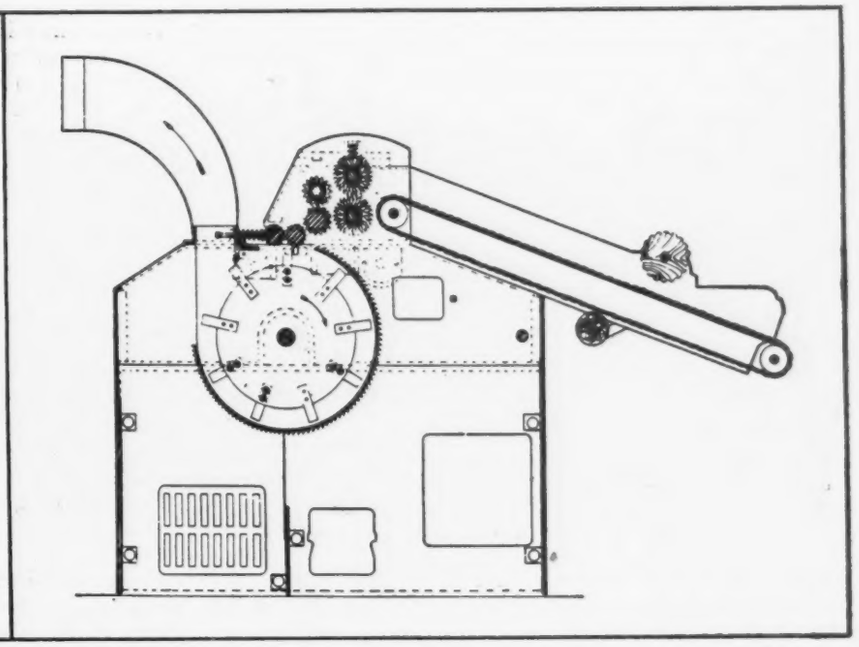


Fig. 4. Sixty percent of the mills use the horizontal cleaner at an average speed of 567 r.p.m. Factory Mutual recommends a speed of 550 r.p.m.

was the first machine in the opener line which had rapidly rotating parts. The average speed of the machines was 659 r.p.m.; but, as the fire-cause survey revealed, vertical-opener speed does not have much effect on the fire losses. The number of fires on this machine decreased slightly with speed increases up to 800 r.p.m. Limited experience, since only a few mills operate at high speeds, indicates that vertical openers should not be run faster than 800 r.p.m.

VULNERABLE POINT. Mills using vertical openers had 15% more fires and a 29% higher fire loss per pound of cotton handled that the average for all the mills surveyed. Several reasons were considered logical for the larger number of fires in the vertical opener. This machine is usually placed first in the opener line and is thus subjected to more foreign materials than subsequent machinery. It is also normally fed by closed ducts, metal hoppers, or solid belts; and these methods of feeding do not permit foreign material to sift out as do lattice openers. One other point which might explain the large number of fires in vertical openers is that the bottom bearing of the machine's beater shaft is not readily accessible for inspection and repair.

Sixty per cent of the mills used horizontal cleaners, and the majority of them placed this cleaner after the vertical opener, or second in the opener line. The average speed was 567 r.p.m., and the number of fires increased as the operating speed increased. At a speed of 400 to 500 r.p.m., the number of fires was 89% of the average for the mills having horizontal cleaners; at 500 to 600 r.p.m., the number was 114% of the average; and at 600 to 700 r.p.m., the number was 165% of the average. Mills with horizontal cleaners had 2% more fires than the average for the whole group surveyed, but the loss per pound of cotton handled was 22% below the average. On the basis of these statistics, the speed of horizontal cleaners, from the standpoint of fire prevention, should not exceed 550 r.p.m.

CENTRIF-AIR MACHINE. Forty-two per cent of the cotton mills used Centrif-air machines, and these mills had 6% less fires and a 25% less loss per pound of cotton handled than the average for the entire group surveyed. The Centrif-air machine, operating at an average speed of around 392 r.p.m., is usually placed in the opener line just after the vertical and horizontal cleaners. This position is advantageous, as far as the prevalence of tramp iron and foreign material is concerned, and was undoubtedly a factor in the fire record of this machine. One interesting fire-preventive feature of this piece of equipment is the non-ferrous type of beater which does the cleaning. In addition, the discharge end of the machine forms an excellent trap or drop-out box for heavy foreign materials.

According to the statistics obtained from the survey, the most favorable speed, from the standpoint of fire prevention, for operating the Centrif-air machine was between 400 and 500 r.p.m.; and the fire losses increased when the speed of the machine was increased or decreased beyond these limits.

Some of the mills reported the use of cleaning trunks, but this equipment has no moving parts and was found to be relatively free of fires. The survey indicated too that cleaning trunks provide excellent traps for heavy foreign matter.

Gyrators were used by 28% of the

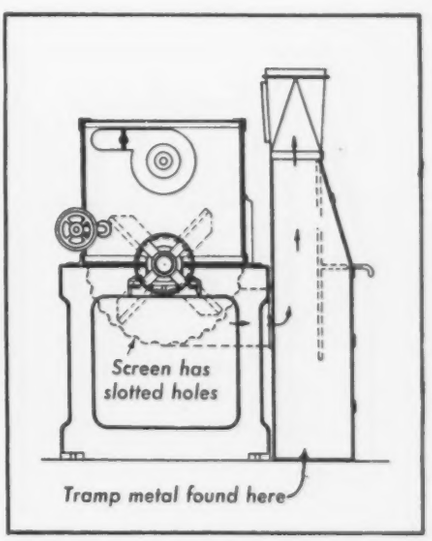


Fig. 5. Forty-two percent of the mills use the Centrif-air machine at an average speed of 392 r.p.m.

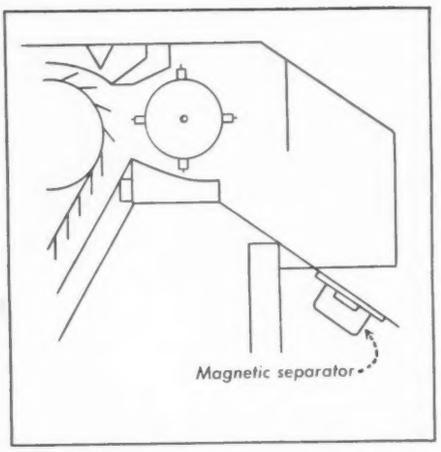


Fig. 6. Magnetic separators should be installed early in the opening line so that foreign material will be removed before reaching rapidly operating machines. A magnetic separator installed at the delivery end of a blending feeder or bale breaker is illustrated above.

mills, but this equipment was found to be unimportant as a source of fires. One precaution regarding the maintenance of the gyrator concerns the feeding of long strands of waste. If these strands are not properly broken up, they may wrap around the bearings and become a possible source of fire.

MAGNETIC SEPARATORS. At the time of the survey, 7% of the mills had magnetic separators, and 56% of the remaining mills were investigating their value and considering their purchase. The favorable results from individual mills indicate that the separators do prevent fires by removing foreign materials from the cotton. These results are more impressive when one considers that 78% of all opener and picker fires are started by foreign material in the stock.

More widespread application of magnetic separators to opener lines is occurring. The separators should be installed between bale breakers or blending feeders and the first cleaning unit, since the earlier foreign material is removed by the magnet the less chance there is for fire.

The number of fire losses analyzed from the standpoint of equipment arrangement offers some interesting figures. The statistics, however, are subject to other variables besides machine layout and should not be considered conclusive in themselves. In an opener line with a combination of Centrif-air machine and horizontal cleaner in the order named, the number of fire losses was 56% of the average. With the same machines, but with the horizontal cleaner first in the line, the number of fire losses was 101% of the average. With the horizontal cleaner first in the line and the vertical opener next, the number of fire losses was 91% of the average. With the vertical opener first and the horizontal cleaner second, the number of fire losses was 165% of the average.

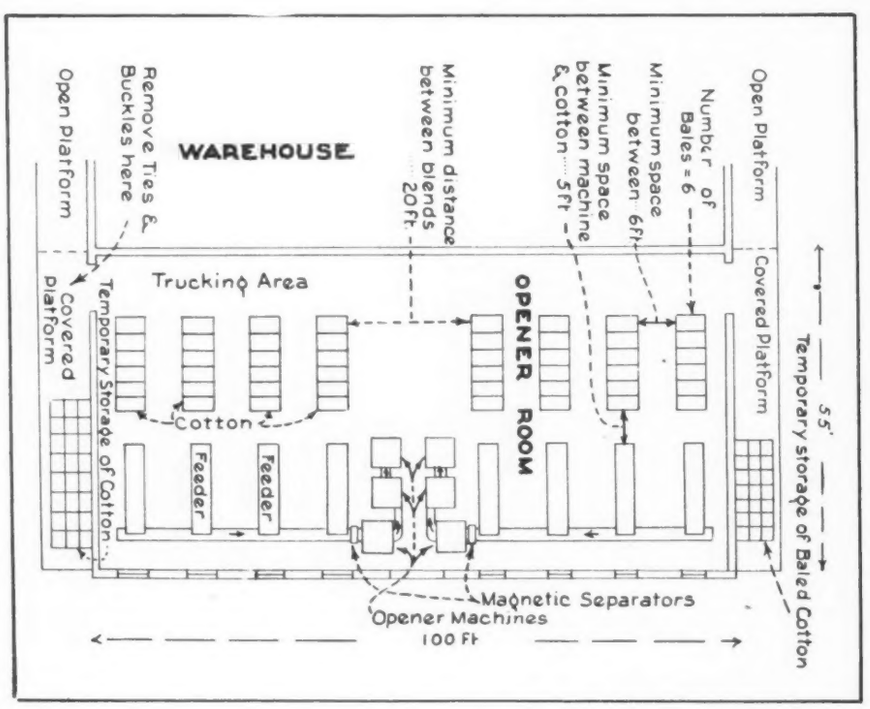


Fig. 7. An opener room layout for maximum fire safety. Note the six-foot aisles between cotton piles.

The Factory Mutual analysis indicates that either the horizontal cleaner or the Centrif-air machine should precede the vertical opener in the opening line. As already indicated, however, the more widespread use of magnetic separators at several points in the opening line may change the trends indicated by the present statistics.

PRODUCTION FACTOR. The average load per opener line for the mills covered by the survey was 766 lb. per hr., and the frequency of fires increased in direct proportion to the amount of cotton handled per opener line. Mills processing 500 lb. or less per opener-line hour had 67% of the average number of fires; those handling from 500 to 1000 lb. per hr. had 99% of the average number; and mills processing 1000 to 1500 lb. per hr. had 137% of the average number. Above 1000 lb. per opener line per hour, the amount of loss per fire increased rapidly. From these statistics, without consideration of variables affecting individual mills, the maximum production rate per opener line from the standpoint of better fire prevention is approximately 1000 lb. per hr.

Six per cent of the mills humidified the opener and picker rooms to a relative humidity of about 50%. The number of fires occurring in these mills was only 39% of the average number of fires, the loss per mill was 35% of the average, and the loss per fire was 96% of the average.

The mills having controlled humidity were too few to provide a good basis for definite conclusions, but their record indicated that benefits are to be derived from moisture in the opener room.

OPENER ROOM METHODS. The Factory Mutual study also showed that no ties or buckles should be removed from bales within the opener room building. If it is impractical to open the bales elsewhere, a limited number of ties and buckles can be left on the bales and some strict method of accounting for them installed. While patented tie cutters are preferred for removing ties, non-ferrous axes are also safe for this operation.

The survey revealed that 90% of the mills laid down an average of six bales per feeder. It indicated also that a blend should not exceed five six-bale piles, since unusual fire loss might otherwise occur. A six-foot aisle between piles of cotton and a five-foot aisle between opened cotton and machinery are recommended. Where six-foot aisles between piles of cotton are impractical, a fire-resistive partition should be erected between every 12 bales.

FLOOR STIFFENING
Overcomes Vibration

HIGHLIGHTS: *Buildings erected 30 or more years ago require stiffening to take care of vibrating loads caused by high-speed machinery.*

By C. J. SHANNON
Vice President
Robert & Co.

MANY MILL BUILDINGS in use today are subjected to a vibrating load which was not anticipated 20 years, or more, ago when the plant was erected. For example, generous load allowances and considerations such as slow-burning construction as a fire preventive, maintenance, long life, all entered into the design of what was generally called standard brick-and-timber, mill construction. Floor beams were 14 x 16 in., 25-ft. spans; bays were 10 ft. 8 in. Floors were of 4-in. splined plank covered with 1-in. intermediate and ⅛-in. top flooring, generally of maple. This design gave satisfactory results. It was strong enough, rigid enough, and more economical.

CHANGING CONDITIONS. But since that time, in certain parts of these buildings, the character of the loading has undergone a change; not the total load, so much, as its vibrating characteristic. The most obvious example of this is the weave room.

Thirty years ago the Draper Model E loom was operating at the average speed of 160 picks per minute. The looms weighed approximately 1,500 lb. and covered a floor space of 30 sq. ft. The weight of the loom itself has increased from 1,500 to 2,200 lb. The weight of cloth and warp has changed but little. The load per sq. ft. on the floor system has risen from 50 to 75 lb. per sq. ft., and the speed of the loom has been stepped up until today it is operating from 190 to 200 picks per minute. Built according to specifications mentioned in the first paragraph the building is amply strong for the loads imposed since it is designed for 125 lb. per sq. ft.

Assume that high-speed looms are being operated in a standard brick-and-timber mill. If two of the legs of each loom rest directly, or approximately, over a floor beam there is little or no vibration. But this cannot always be arranged. Sometimes, and very often, the loom is placed in or near the center of the bay and merely lagged to the flooring. A springiness develops that is bad for the loom, prevents top efficiency, increases maintenance costs, and is bad also for the building.

Various methods of stiffening or reinforcing existing floor systems have been devised. The illustrations give details of how this has been worked out under certain conditions. Other methods will give just as satisfactory results. In Fig. 1 and 2, the lag-bolts are run into the floor plank on alternate sides of the center I-beam. In Fig. 3, the nailing strip on top of the stiffening angle provides means of taking care of conduits, piping, wires, etc., as indicated. Where none exist the angle can be placed directly against the underside of the floor plank.

Where the looms are located on the first floor over a low or unfinished basement area a simple method sometimes used is to put in intermediate floor beams supported on posts.

Frequently it seems advisable to stiffen the floor under cards to take the sag out of the beams, keep the floor level, make it possible to secure a closer set on the cards and maintain the setting. Where this is to be done it is necessary only to stiffen the floor beams themselves by means of steel channels bolted on each side.

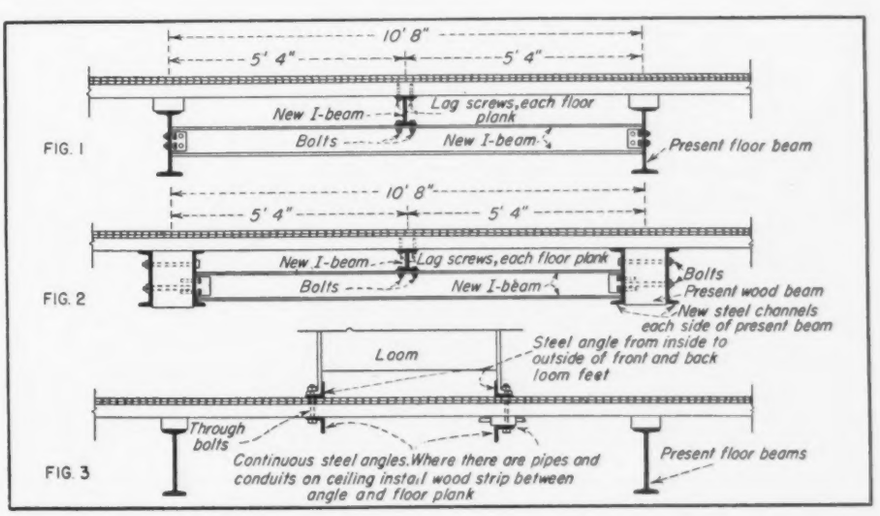


Fig. 1. *Method of stiffening floor when beams are rigid enough but the flooring too flexible.* ***Fig. 2.*** *Method of stiffening when beams and floorings are too flexible.* ***Fig. 3.*** *Simple method of reducing loom vibration when floor beams are rigid enough but flooring moderately flexible.*

Spinning Overseers Should Review TWIST FUNDAMENTALS

HIGHLIGHTS: *Very frequent twist changes require accurate knowledge of constants—A twist-conversion chart saves time and reduces manufacturing errors—Three methods for calculating a new constant.*

By F. H. GUNTHER and MARCUS GROSS

»In one spinning room of approximately 65,000 spindles, the overseer has developed a twist-gear conversion chart, similar to the one shown in Fig. 1 for checking on twist gears, constants, and turns per inch. He has also listed the practical limits of twist-gear size for his manufacturing layout and has charted the range of gears for each twist constant used. In making this chart, he found fractional t.p.i. per 100 units of twist constant (100 ÷ twist gear) for each of the gears and extended the chart to cover all constants in use. By the simple calculation, (new constant ÷ 100) x fractional t.p.i., any new constant may be extended. Extra blank columns are included in this illustration so that readers may use the chart for their own calculations. It should be stated that the twist-gear range of 40 to 60 teeth shown is not the practical range selected by this overseer. It was selected by the editor for illustrative purposes only.

AN OCCASIONAL REVIEW of twist fundamentals will help an overseer of spinning not only to find the proper methods of figuring twists per inch, twist constants, and twist gears, but also to instruct upgraded assistants in the mechanics of major twist constants, twist-conversion tables, and other devices used conveniently in spinning yarns requiring different twists.

Actually, twist per inch is determined by laboratory methods or by machine inspection when the yarn is already in production on the frame. The latter method is normally followed by the overseer of spinning. To obtain the t.p.i., he finds the ratio of the turns of the spindle to the delivery of the front roll. Stated as a calculation, this ratio is:

$$\frac{\text{R.p.m. of spindle}}{\text{Circum. frt. roll x r.p.m. frt. roll}} = \text{t.p.i.}$$

In calculating a twist gear for the required t.p.i. of a new yarn, however, the overseer uses the twist constant. The twist constant, not unlike draft constants, can best be described as a mechanical calculation in which the numeral 1 is substituted for the twist gear. The constant thus represents the t.p.i. of a theoretical one-tooth twist gear, as illustrated in formula A, Fig. 2.

When the regular twist gear is inserted into the calculation, or constant, the quotient becomes the desired t.p.i.; and the constant ceases to exist except for calculation purposes only. Conversely, the division of the twist constant by the required t.p.i. of a new yarn

TWIST-CONVERSION CHART

Twist Gear	T.p.i. for 100 units of constant	T.p.i. for 930 const.	T.p.i. for 1120 const.	T.p.i. your const.	T.p.i. your const.
40	2.50	23.25	28.00		
41	2.44	22.69	27.33		
42	2.38	22.13	26.66		
43	2.33	21.67	26.10		
44	2.27	21.11	25.42		
45	2.20	20.46	24.64		
46	2.17	20.18	24.30		
47	2.13	19.81	23.86		
48	2.08	19.34	23.30		
49	2.04	18.97	22.85		
50	2.00	18.60	22.40		
51	1.96	18.23	21.95		
52	1.92	17.86	21.50		
53	1.89	17.58	21.17		
54	1.85	17.21	20.72		
55	1.82	16.93	20.38		
56	1.79	16.65	20.05		
57	1.75	16.28	19.60		
58	1.72	16.00	19.26		
59	1.69	15.72	18.93		
60	1.67	15.53	18.70		

$$\frac{\text{Your constant}}{100} \times \text{t.p.i. per 100} = \text{regular t.p.i. for twist gear.}$$

Fig. 1. The twist-gear conversion table is convenient for checking gears, constants, or twists per inch. The blank columns to the right are for the reader's use.

results in the number of teeth required in the twist gear.

FIGURING CONSTANTS. To determine the twist constant, the overseer figuratively turns the front roll gear once and retraces the frame gearing to the spindle. He then includes the circumference of the front roll (3.1416 x dia.), ratio of spindle whorl to cylinder diameter, and allowance for tape slippage.

There are some variations in the methods used for figuring constants, and most of them concern the method for finding the ratio of spindle whorl to cylinder diameter. The ratio, of course, refers to the number of times the spindle whorl will turn for each turn of the cylinder; and the chief point of variation in methods seems to be that some methods include the thickness of the tape with the whorl diameter, while others do not.

Most ratios are determined by the machine manufacturer and are utilized in the constant which accompanies the frame, with or without an allowance for tape slippage. Running conditions in the mill, however, will usually require the overseer to compile his own ratios.

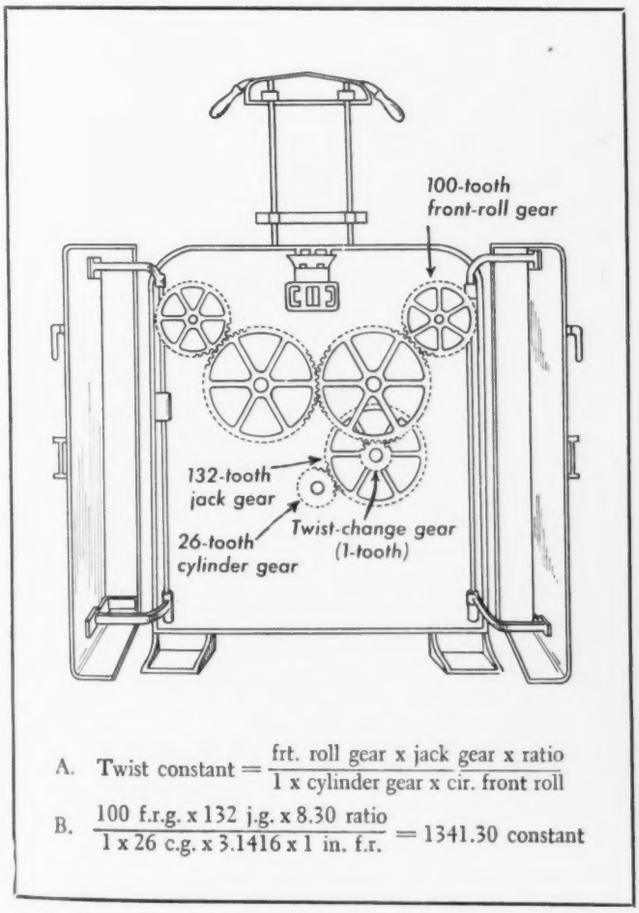
There are two methods commonly used to find the ratio of spindle whorl to cylinder diameter. The spindle and cylinder may be chalked and the turns of the spindle counted as the cylinder is turned one revolution by hand. A second method, which will normally give greater accuracy, is to take the speeds of all the spindles on a frame, total them, and obtain the average speed. The average spindle speed is divided by the cylinder speed, and the result is the ratio of spindle whorl to cylinder diameter, including tape slippage. For example, if the average spindle speed is 9200 r.p.m. and the cylinder speed is 1150 r.p.m., the average ratio of the frame will be 9200 ÷ 1150, or 8.00.

RATIO IMPORTANT. The proper ratio is of great importance in band-driven frames, especially in the older models where uniformity of twist may be considerably less than that obtained from tape driven frames with tension take-up idler pulleys. The pitch diameter of the band-driven spindle also makes the task of determining proper ratios much more difficult. For instance, Fales & Jenks recommend that ⅛ in. be added to the diameter of band-driven whorls to compensate for the part of the band which rides upon the pitch diameter of the whorl. As a general rule, determining the average spindle speed, as described above, will give the best results in the determination of ratios for band-driven frames.

There are many other factors of twist recognized by cotton spinners as important. In the practical matter of finding what gear to use for a given t.p.i., however, these factors have not yet been reduced to a measurement that can be entered into normal twist calculations. Some of these factors are: traveler drag, yarn contraction, heavy and light cross sections of delivered yarn, slack tapes, tight tapes, worn spindles or bolsters, and damaged bobbins.

A typical Whitin constant is shown in calculating *B*, Fig. 2. This does not include an allowance for tape slippage but does include one for tape thickness.

(*Continued on page 180*)



A. $$\text{Twist constant} = \frac{\text{frt. roll gear x jack gear x ratio}}{\text{1 x cylinder gear x cir. front roll}}$$

B. $$\frac{\text{100 f.r.g. x 132 j.g. x 8.30 ratio}}{\text{1 x 26 c.g. x 3.1416 x 1 in. f.r.}} = 1341.30 \text{ constant}$$

Fig. 2. This schematic drawing shows the gears in the head end of a spinning frame which enter into the calculation of a spinning twist constant.

Fig. 3. Due to the presence of variables which cannot be calculated, maintaining accurate twist is one of the major problems of a spinning-room overseer.

—RAYON ON WOOLEN SYSTEM—

Oiling Rayon and Wool Is Similiar But OPENING DIFFERS

HIGHLIGHTS: *Oil used on rayon should be stable and easily removed—Customary oiling equipment can be used to apply—Short rayon staple requires less oil but more emulsion—Regular wool picker too severe for rayon—Staple should be opened before feeding to card but done more gently.*

By J. T. DRENNEN and T. A. BOSWELL
Textile Research Dept., American Viscose Corp.

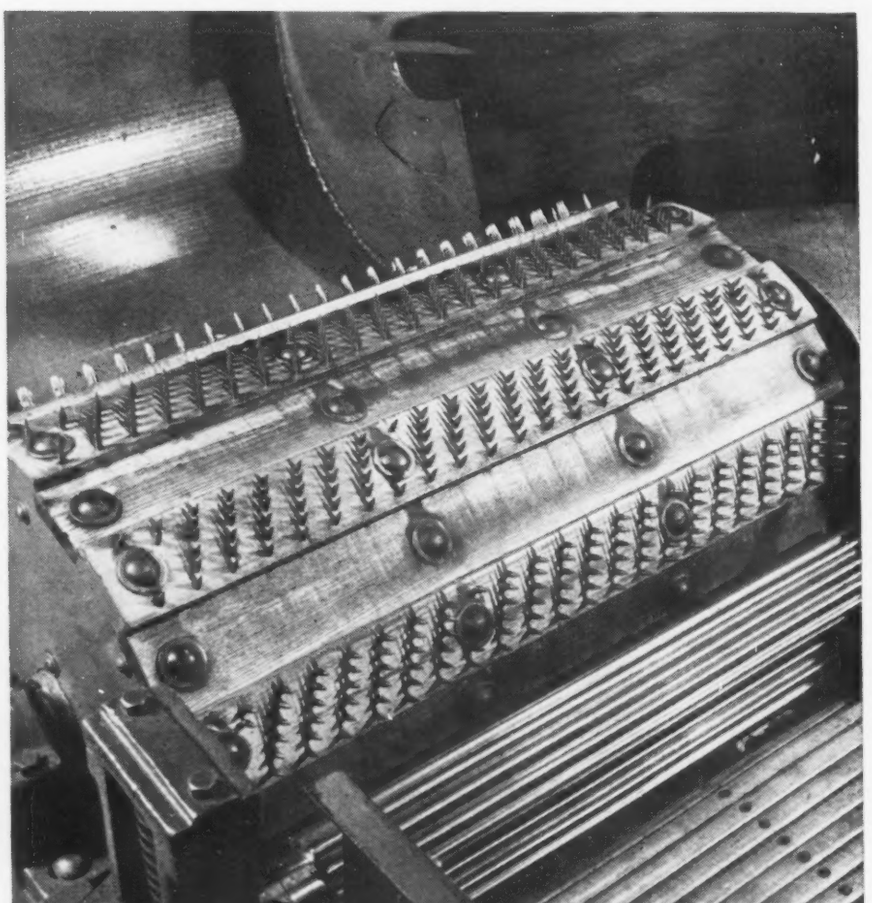


Fig. 1. Openers built especially for rayon are better than the regular wool pickers as they provide a moderate amount of opening without excessive breakdown of staple.

ONE OF THE FIRST, and certainly one of the foremost, stumbling blocks when running rayon on the woolen system comes under the general heading of emulsions. Choosing the proper staple length, luster, and denier is important [TEXTILE WORLD, December, page 100] but unless oiled properly even the best rayon will run poorly.

The type and amount of emulsion used as well as the method of application are important. Many mistakes can be made in applying emulsions, either through carelessness or failure to realize the importance of this step. The handling of the staple during application of emulsions can and often does determine the quality of the finished product. Here might well be the root of much uneven yarn.

Rayon does not require a special oil or any special equipment for application. Any reasonably efficient spray system will prove entirely satisfactory. The oil should be of a good grade and must possess the following qualities:

1. Form a stable emulsion with water.
2. Be readily removable by scouring.
3. Not become rancid nor discolor the stock during storage.

Best results will be obtained from an oil that has good dispersing qualities and is not of a "tacky" nature.

In tests, the first runs of 100% rayon staple were strictly a matter of trial and error. Having run rayon and wool blends, we were familiar with the emulsion and procedure used for this type of work. However, we were also aware of the fact that it is considered best if the emulsion is applied to the wool only and the dry rayon stock is blended with the wool during picking. Consequently, we knew nothing of how rayon would react when the emulsion was applied directly to it.

The first trial was to use the same

emulsion used on a typical rayon/wool blend; 70% water/30% oil, but cutting the amount to one-half that ordinarily used. This allowed us to spin a fair yarn up to 3 run. It was noticed, however, that the high water content caused the staple rayon to mat, which in turn caused the formation of neps and excessive staple breakdown during both picking and carding. It was necessary to lower production considerably in order to obtain a roving reasonably free of neps.

Realizing that water was the great offender, the next trial was to eliminate the water entirely and try straight oil, starting with 3% and working up. Three percent proved to be an insufficient amount, resulting in excessive fly, uneven roving (due to lack of control of the fibers), very little cohesion in roving, and very low production in order to obtain a clear web. Six percent was an improvement over the 3%, but was still far from practical; 9% gave a general improvement and fair results.

It was found that any amount of straight oil in excess of 9% made the stock so "tacky" that it stuck to those parts of the card where webs had to be transferred—such as broad-band feeds and at the dividing rolls of the tape condenser, making condensing impossible.

This left the alternative of working out a suitable emulsion. First thought was to prepare an emulsion with as high a ratio of oil to water as possible. This proved to be 60% oil and 40% water. Any preparation in which the oil exceeded 60% became too thick to apply by present methods. Up to this point, the 60/40 emulsion was by far the best thing tried. In fact, it was used for several months while we were searching for some way to cut the percentage of water. Finally the idea developed of applying 3% straight oil to the rayon on the first run through the picker, and then applying the 60/40 emulsion on the second run. This is the procedure now used on all 100% rayon lots. However, the percentage of oil and the amount of the emulsion differs with the type of rayon being used.

OILING DIFFERENT BLENDS. When running a rayon/wool blend, straight oil is sprayed on the rayon, and the emulsion is applied to the wool, each being a separate operation. For example: for a 50/50 blend made up of 5.5 den., 2½-in. dull staple and 58s wool, 6% straight oil is applied to the rayon, and a 60% water/40% oil emulsion (figured on the basis of 9 qt. per 100 lb.) is applied to the wool. These calculations are made on the weight of the rayon and the weight of the wool, separately.

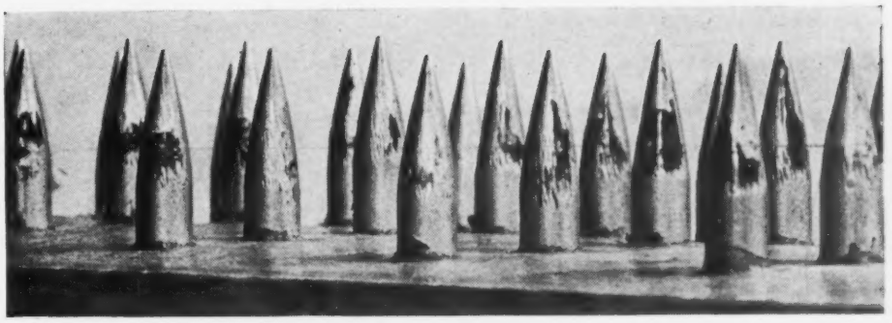


Fig. 2. Close-up view of straight pins used on each of the eleven lags on the 26-in. diameter cylinder of the special picker for handling rayon staple.

With 100% rayon lots, on 5.5 den., 2½-in. dull staple and on 3.0 den., 2-in. dull staple, 3% straight oil is applied on the first run through the picker, and 4 qt. of a 60-oil/40-water emulsion on the second run. When using rayon coarser than 5.5 den., the percent of straight oil can be cut a third. Since a coarser denier has less fiber cohesion, less lubrication is necessary for good carding. The percent of straight oil can be cut by one-half when bright staple is used, as it too has less fiber cohesion. Staple rayon shorter than 2 in. requires a 25% increase in the amount of emulsion and a 33⅓ decrease in the percent of oil. The reason is that shorter staple

(Continued on page 186)

Table I—Emulsions Recommended for Different Staple Fibers

Description of Staple	% Straight Oil to First Picker Run		Qts. 60-oil/40-Water Emulsion Per 100 Lbs. to Second Picker Run
	Dull	Bright	
5.5 den., 2½-in. dull staple	3%	1½%	4
3.0 den., 2-in. dull staple	3%	1½%	4
Staple coarser than 5.5 den	2%	1%	3
Staple finer than 5.5 den	3%	1½%	4
Staple shorter than 2-in	2%	1%	5
Staple longer than 2½-in	3%	1½%	4

Table II—Production in Picking With Various Speeds and Settings

Test	Feed Roll Speed, r.p.m.	Feed Roll Setting, In.	Grid Setting, In.	Table Loading	Pounds Picked	Hourly Production, Lb.
1	34	¼	2¼	full	25	1,600
2	34	¼	1¼	½	12½	1,600
3	34	¼	¾	½	12½	1,600
4	21	¼	¾	½	12½	1,080
5	21	¼	¾	full	12½	500
6	21	⅛	¾	½	12½	1,080
7	21	⅛	½	½	12½	1,080

TABLE III—Percent Breakdown of Unlubricated Staple in Picking

Denier	Staple Length, In.	Luster	Lb. per Hr.	Percent breakdown
1.5	1 9/16	Dull	1080	3.0
3.0	2	Dull	1080	2.6
5.5	3	Bright	1080	1.5
5.5	4	Bright	1080	4.0
5.5	5	Bright	1080	4.5
5.5	6	Bright	1080	5.5

MAINTENANCE CONTROL Can Be Tailored to Fit Average Textile Mill

HIGHLIGHTS: *Small and medium-sized mills need flexible systems for maintenance control—A mill of 35,000 spindles and 850 looms develops specialized maintenance—Planned overhauling and inspection reduce costs—Long-range results charted by mill.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

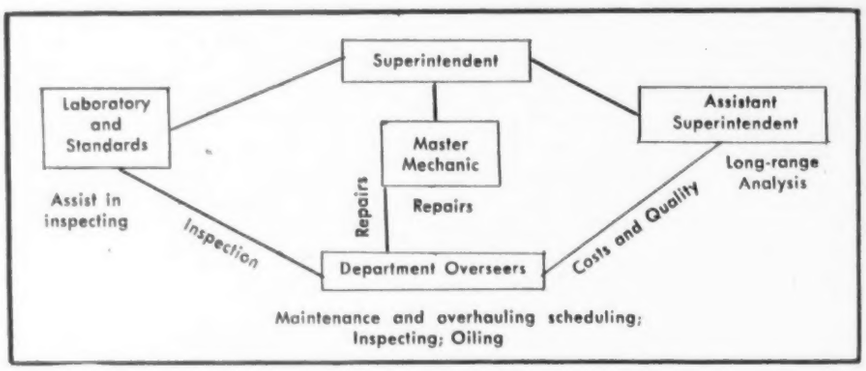


Fig. 1. How the superintendent organized the lines of authority for maintenance control. Note that most authority remains with overseers.

WHEN PROPERLY HANDLED through the office of the superintendent, maintenance control directly improves mill-machinery operation and indirectly benefits quality and costs. While large mills may require large centralized and specialized maintenance departments, small and medium-sized mills have found flexible systems of maintenance control suitable for organizing and measuring the maintenance of mill machinery. These systems usually follow the normal flow of mill authority and operate through the superintendent and departmental overseers.

The problem of maintenance at one mill of approximately 35,000 spindles and 850 looms is typical of many mills of comparable size. Much effort and money were expended in attempts to obtain good maintenance and smoothly operating machinery, but little progress was made until the problem was analyzed and the solution approached upon a systematic basis. The analysis revealed that the need of this particular mill was for a maintenance program which stressed two essentials: (1) a method for organizing, or tying in, the various departmental programs into a mill program; and (2) a method for measuring the effectiveness of maintenance from the standpoint of the whole mill.

The crucial spot in the mill was the weave room, for here was often reflected the quality, or lack of it, of carding and spinning. Yet, a casual analysis of weave-room production and seconds over a period of years revealed that not much progress had been made, despite considerable expenditures for maintenance and new equipment. Analysis of overhauling also revealed that worn parts were not being replaced, which was attributed to lack of proper parts at the time.

OVERSEERS AS STAFF. Some facts necessary for good maintenance control were at hand. There were some overhauling schedules, supply costs, and overhauling costs; but these figures and facts were so hidden away in individual

Card # 23

Date Reclothed
Jan 20, 1941

Dates Overhauled
Aug 19, 1941
Aug 1, 1942
July 10, 1943
Aug 13, 1944
June 15, 1945

Regrindings for Jams or Other Causes
July 1, 1941
May 21, 1943
Feb 1, 1944

Other Factors
55 yr. sliver
4 hr. grinding

Fig. 3. To put the finger on the causes of excessive variations in the life of card clothing, the superintendent and overseer of carding record important facts about each card on forms similar to the one above.

departmental records that they were of little use from the standpoint of providing analytical material for the mill as a whole.

After much discussion of better-maintenance policies, the overseers, assistant superintendent, and superintendent, acting as a staff, drew up the immediate objectives of a proposed program, as follows:

1. Full information on maintenance results at each process. This would necessitate: (a) accurate inspection of the machines immediately after overhauling, (b) analysis of the replacement-cost record of strategic machine parts, (c) a procedure for testing new ideas or equipment. (This latter objective was not confused with large-scale purchases of machinery, which remained a prerogative of general management.)

2. Planned overhauling. This objective would enable the supply department to have a quantity of replacement parts before overhauling began, so that all worn parts could be replaced during the overhauling process.

3. Unbiased machine inspection. The laboratory man was also a practical production man, and it was decided to route all inspection reports through him. His department was given the privilege of rechecking machine performance (after overhauling) with ends-down, loom-stops, and other tests. Actual machine inspection remained within the department.

4. Analysis of long-range results. It was decided that compilation of data on long-range results would be done by the assistant superintendent.

MAINTENANCE DETAILS. The organization was finally worked out as shown in Fig. 1. From the chart it can be seen that overhauling and maintenance schedules remained under the authority of the overseers but were subject to whatever changes the staff recommended as results of the program became evident. The immediate results of overhauling were to be obtained by machine inspection, which would be done by the second hand of the first shift and followed up by the second- and third-shift second hands. When the overhauling inspection form, Fig. 2, was finally approved by the overseer, it was routed to the laboratory, where additional machine checking could be done if necessary.

Formerly, overhauling was done by two separate crews, one for scrubbing steel rolls and another for plumbing spindles, etc. Under the present method, all overhauling is done at the same time; and machine-down time has been reduced. While spindles are plumbed on one side, the steel rolls are removed from the other side and scrubbed. New cots,

SECOND HAND'S OVERHAULING & INSPECTION REPORT

MILL Moss Inc FRAME 24 DATE 9-14-45 SECTION 1

OVERHAULER CREW (Names) J. D. Doe, John Smith & helpers

CREEL

Creel boards	Painted
Shipper	OK
Skewers	2 replaced
Steps	10 replaced
Roving rods	OK

RAILS

Guides	Set
Ring rail	OK
Rings	OK
Lifting rods	new bearings
Lifting arms	OK
Spindles	3 replaced
Tapes	OK
Whorls	OK
Doffer guards	2 replaced
Separators	OK

UNDERNEATH FRAME

Oil tubes	OK
Cylinder bearings	OK
Cylinder	OK
Idlers	OK
Builder	OK
Cam	OK
Chain	OK
Take-up gear	OK
Pitman roll	replaced
Taper	OK
Stroke	OK

FRAME LINED AND LEVELED Yes

ROLLS AND STANDS

Top clearers	OK
Trumpets	3 replaced
Roving traverse	replaced
Roving-traverse stroke	OK
Saddles	12 worn - improper Oiling
Stirrups	OK
Levers	OK
Lever screws	set
Top rolls	new front lines
Aprons	replaced 150 - more
Cradles	OK
Steel rolls	OK
Cap bars	OK
Cap-bar nebs	Replaced 20 - bad oiling
Roll stands	OK
Roll settings	OK
Revolving clearers	OK
Scavenger rolls	recovered
Oil Tubes	OK

HEAD OF FRAME

Cylinder gear	OK
Oil tubes	OK
Gear studs and shafts	OK
Twist gear	OK
Lay gear	OK
Crown gear	OK
Draft gear	worn - replaced both
Pulley or sheave	OK

LIST NEW PARTS NEEDED

none

SUGGESTIONS Oil getting on aprons

OKAYED F B Parker (2nd shift) OKAYED C E Smith (3rd shift)

Fig. 2. Planned overhauling enables the spinning department to do all overhauling tasks simultaneously, thus reducing machine down-time. Note that this overhauling record is used also for inspection by second hands.

Overhauling Schedule — Mon Mills Inc.

Machines	Men	Cycle
Openers & Pickers	1 man	14 weeks
Cards	8 grinders, 1 helper	1 year
Drawing	1 overhauler with helper, plus section men	16 weeks
Slubbers		12 weeks
Intermediates		14 weeks
Speeders		14 weeks
Spinning	2 overhaulers, 3 helpers	1 year
Weaving,		3 months
Pick motion, feelers, automatic change, battery, etc.	2 men	3 months
Let-off, take-up, friction, protector rods, frogs, etc.	2 men	
Shuttles	3 men	
Lay swords, rocker shafts, whip rolls, sand roll, etc.	1 man	3 months
Leathers	1 man	

Fig. 4. The overhauling schedule, with the number of men and the cycles, was determined by the overseers and superintendent acting as a staff. The weave room is detailed because major changes were undertaken there.

Item ..... check straps ..... MFR. Jones & Co.
Details ..... new laminated construction X B
Test ..... loom #100, 102, 104, 106. 8-27-45
Ran ..... taken off second week — worn
Test Okayed By ..... Date .....

(Send copy of this report to superintendent)

Fig. 5. The superintendent and overseers keep records of tests on new devices to determine their usefulness.

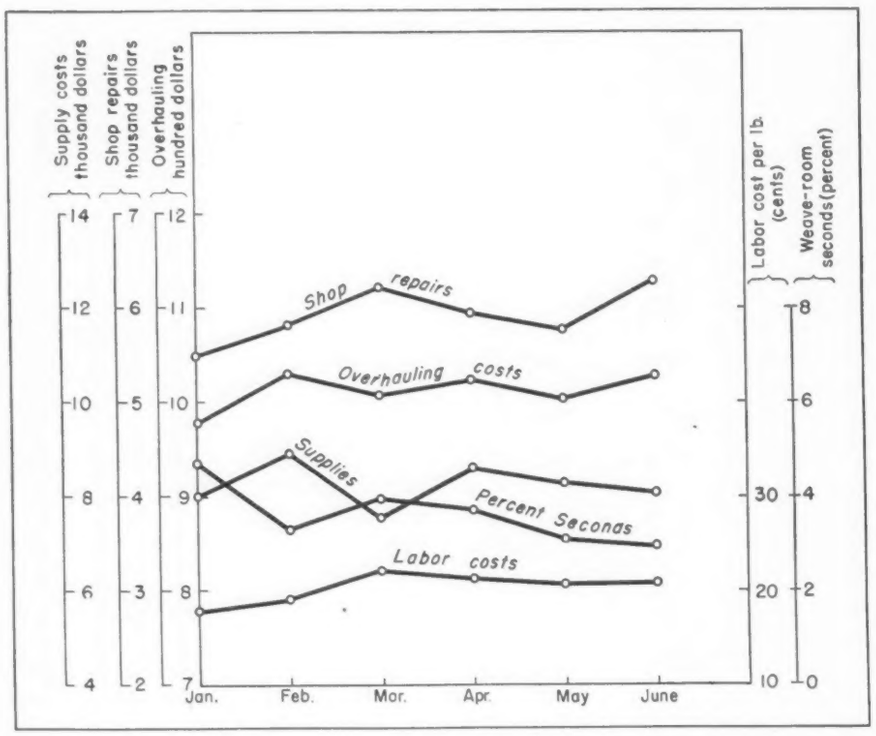


Fig. 6. This chart is kept monthly by the assistant superintendent as a long-range check on results obtained from maintenance and other activities. Note that supplies, overhauling, machine-shop repairs, labor costs, and the percentage of weave-room seconds have been charted.

rolls, and other equipment are installed at this time.

A record of cards reclothed, Fig. 3, should be made of this, or any similar, major maintenance item. From existing records, the card-room overseer determined that the life of card clothing varied from about four to 13 years. There were no apparent reasons for such extreme variation, since similar stock was run through all cards; and the overseer decided to consolidate all facts and reports coming to his office under the card-clothing record as an aid toward future analysis of clothing-life variations. It will be noted that jams and regrindings are reported and posted to the record by machine number.

The major change in the mill's overhauling schedule occurred in the weave room. Here, the first-shift second hand was in charge of the work, and he followed the policy of using extra fixers for the job. This did not lead to systematic overhauling, since there was no definite, prearranged assignment. Fixers were assigned minimum job loads and were expected to help whatever overhauling force that was assembled.

SPECIALISTS DEVELOPED. On a temporary basis, the overseer of weaving worked out the schedule shown in Fig. 4. This method developed specialists among the overhaulers, and of course the process required a considerable amount of time. With special overhaulers responsible for definite parts of the loom, the overseer spread out the flag-fixers to more looms.

For testing new devices or equipment, the record shown in Fig. 5 was utilized. It should be said that this was not an effort to discourage the purchase of new accessories but to act as a deterrent to the acceptance of untested gadgets as standard equipment.

Oiling and machine-shop repairs remained unchanged, except that the master mechanic was expected to report any abnormally large repair items to the monthly maintenance-staff meeting.

The long-range analysis was developed by the assistant superintendent, as shown in Fig. 6. Dollar analysis of supplies, machine-shop repairs, and overhauling costs was placed upon this monthly chart for two reasons. The figures were desirable from the standpoint of economy, and the record was a check for supervisors who had a tendency to mistake maintenance control for a policy of skimping on supplies. Labor costs were added to the chart, although the staff believed that time study or other measured standards would be preferable. Weave-room seconds, a major consideration in any contemplated change, were also recorded.

Versatile Layout Used by Georgia Mill for KNIT WORK SOCKS

HIGHLIGHTS: *Automatic latch-needle machines with 84, 108, and 176 needles permit wide range of sock weights—Single end of 6s cotton yarn or double end of 12s used for knitting 24-oz. bundles—Picker beaters run up to 1100 r.p.m. to open the fibers fully—Twist multiplier of 2.50 preferred for soft, pliable yarns.*

Cotton work socks of several standard colors and weights are knitted from yarn prepared at the mill.

CONSIDERABLE VERSATILITY in knitting work socks to specifications is possible with the machine layout at Georgia Mfg. Co., Columbus, Ga. Using latch-needle machines with 84, 108, and 176 needles, in addition to dyeing stock and preparing yarn at the plant, the mill is producing socks ranging from 16 to 32 oz. per. dozen pairs.

All knitting machines are Scott & Williams HH, 3¾-in. cylinder, 36-gage, and operate at the standard cylinder speed of 200 r.p.m. Knitting data, as applied on each size machine to representative weights of socks, are:

84-needle, using a single end of 4s cotton yarn or a double end of unplied 8s yarn, to produce a 32-oz. bundle of socks;

108-needle, using a single end of 6s yarn or a double end of unplied 12s yarn, to produce a 24-oz. bundle;

176-needle, using a single end of 16s yarn to produce a 16-oz. bundle.

The technique at Georgia Mfg. Co. for producing 24-oz. work socks begins with the selection of cotton. Since the yarn requirement of the knitted sock is for a soft, pliable yarn, the mill uses Middling cotton of ⅞-in staple. Half the stock is used undyed, and the rest of it is dyed direct blue, brown, or black for spinning "mock-twist" yarn.

Dyeing is done under pressure in a Morton raw-stock dyer. The capacity of the machine is 1000 lb.; and when applying the formula for blue, with a dyeing time of 1 hr., four batches can be processed during an 8-hr. shift.

After dyeing, excess water is removed from the stock by a 400-lb.-capacity Tolhurst extractor, and the cotton is rebaled and stored until needed. When processed, a mix of 15 bales of dyed stock is blended to insure repetition of color shades in the yarn.

The sequence of the opening-room machinery is as follows:

Saco-Lowell bale breaker
Saco-Lowell horizontal opener
Vertical opener
Centrif-air Superior cleaner

The beaters, listed from back to front, of the one-process Saco-Lowell pickers are operated at the following speeds:

3-blade..... 850 r.p.m.
Kirschner.....1000 r.p.m.
Kirschner.....1100 r.p.m.

The draft organization for the yarn from which the work socks are knitted is as follows:

Picker lap (oz. per yd.).....13.6
Card sliver (gr. per yd.).....60
Breaker drawing 65
Finisher drawing 72
Roving (hank)..... 1.60
Yarn number 12

Carding production is 8 to 9 lb. per hr.; and the 4-roll drawing frames, equipped with metallic rolls, were recently overhauled by Medley Mfg. Co., which installed its "Precision Drawing." Fly frames in use at present are of conventional draft; and for all except the coarsest numbers, two processes, slubbers and speeders, are used.

On the Saco-Lowell (Roth system) spinning frames, one bobbin of white and one bobbin of dyed roving are creeled together to produce mock-twist yarn, which results in a sleazy appearance when knitted into the body of the sock. Standard colors at the mill are "blue mixed" (blue and white), "brown mixed" (brown and white), and "grey mixed" (black and white). The yarn is soft-twisted, using a twist multiplier of 2.50, to produce a relatively fuzzy and flexible finished product.

(*Continued on page 198*)

FLAX Can Be Run On Cotton and Worsted Machinery

HIGHLIGHTS: *Cottonization is key to utilizing fiber—Commercial production achieved in Europe—Cotton machines to handle 3-in. staple are preferred —Worsted machines are conventional.*

By S. A. G. CALDWELL

THE MAIN ADVANTAGE in spinning stapled flax fiber on cotton and worsted machinery is the economy effected in manufacturing costs, as cotton and worsted systems of processing are much less expensive to install and operate than the system normally employed for flax.

In prewar years, considerable strides had been made in England in the cottonization of flax and other bast fibers and in processing the treated material. In 1937, a decree was made by the Minister for Industry and Trade requiring yarn producers in the Polish cotton industry to purchase and use a certain amount of home-produced "cotonin," or cottonized flax. In Italy, the production of cottonized hemp increased steadily in prewar years; and in 1938, approximately 8,000 tons of this material was used by the Italian cotton industry.

In Great Britain, also, the processing of cottonized flax and hemp on cotton and worsted machinery had passed the experimental stage by 1939; and manufacturers were awakening to the possibilities presented by the new yarns and fabrics, which combined economy in cost of manufacture with such characteristics and advantages of pure linen as luster and finish in damasks, absorbency in towelling, and appearance and coolness when made up as bed linens.

As the staple length of the fiber is reduced, the difficulty of processing it on cotton machinery for the production of all-flax yarn increases, and the range of yarn counts to which it can be spun becomes coarser. When mixed with cotton, the count range increases directly with the proportion of the latter fiber present.

FIBERS DIFFER. The dimensions and chemical composition of the purified ultimate flax fiber are approximately similar to those of cotton, but the physical structure differs considerably. The cotton fiber is flat and ribbon-like, with somewhat thickened edges and convolutions varying in number and direction which considerably increase its clinging power and have a definite bearing on yarn twist and strength.

The ultimate flax fiber is cylindrical in shape, tapering to a sharp point at each end. The cell walls are thick and the surface is smooth, so that in a purified condition its clinging power is negligible. Even with a high degree of twist, the strength of yarn spun from chemically pure flax fiber is very low. Flax treated in this manner is usually spun in admixture with cotton. It is possible to stop the chemical purification at an earlier stage, so that longer staple-fiber strands are obtained which can be processed in conjunction with wool on worsted machinery.

The term "flax cottonization" is generally applied to the process incidental to the reduction in staple and purification of the fiber, and the idea is by no means new. During the last century, several patents were taken out and processes evolved for this purpose; but these were never exploited to any great extent for economic reasons. Recently, interest has again been revived because of improved methods of mechanical handling to reduce the cost of crop production and because of the possibility of utilizing the fiber from straw which was grown for seed production and which was formerly mostly destroyed.

SEPARATION MECHANIZED. Flax fiber extraction and stapling involves a mechanical treatment to break the straw and remove as much as possible of the extraneous plant tissue. This is followed by a chemical treatment to eliminate extraneous tissue and intra-fiber binding substances, so as to effect the necessary degree of separation.

In the cottonization of flax, mechanical decortication is usually effected on a multiple-roller machine of the horizontal type used for jute softening, the roller flutes and speeds being modified to suit the particular requirements of the fiber. A machine for this purpose is described in British Patent No. 488,-905. On this unit, the rollers of succeeding pairs are varied in diameter so as to vary the peripheral speeds. The pitch of flutes is also varied, as is also the pressure, which is greatest on the largest rollers. The pitch of flutes becomes progressively finer towards the delivery end of the machine, and the speed of each succeeding pair of rollers is increased to obtain a certain scraping action as the material passes through the nip. The intersection of the flutes is such as would prevent undue strain

Fig. 1. Improved techniques in handling flax fibers preparatory to manufacturing makes possible the use of seed-flax straw, formerly unusable for linen yarn and fabric.

or damage to the fiber. On a 34-pair roller machine of this type, a reduction of 70% in bulk can be effected. In some systems of flax cottonization, the flax is stapled by circular cutting knives before entering the decorticator.

The partly decorticated material can now be passed through a machine of the type designed to free cotton from leaf and other extraneous matter. This will help to remove loose shive, etc., although such machines are not effective for the elimination of adhering matter.

The Platt continuous process for mechanically treating flax straw to produce cleaned flax fiber in staple length, which can be worked up into laps, or combined with cotton or other fibers for processing on cotton or worsted machinery is set out in British Patent No. 448,571. This makes use of cotton opening, beating, and cleaning units such as feed lattices, pneumatic conveyors, Wilkinson cylinder opener, Crighton opener, etc. By this process, a clean fiber of approximately 4-in. staple length is produced.

Flax Production Mechanized

By P. RIPLEY

British experiments in flax breeding have brought about a higher-yield and a virtually disease-resistant variety—the improved Liral Prince. It is unknown whether retting by chemicals or by means of introduced bacteria will be used more extensively; but there is little doubt that the future is with one of these methods, rather than with natural or comparatively natural means. Tank retting is, however, now fully established, and, by resort to aeration, without the necessity of constantly changing the retting liquor. The liquor can be used many times over.

Hand pulling of flax during harvesting is now rapidly disappearing. The original Soenens (Belgian) pulling machines have been much improved upon and several efficient kinds are being used in England. The latest deseeding machine (not yet released for general use) is, in fact, quite of a combine nature and, substituting its own scutching process, does away with separate turbine scutching. Conditioning of flax plays an important part in successful scutching, and can be done by steam in the turbines.

CHEMICAL DE-GUMMING. De-gumming, which necessarily follows any system of decortication and stapling, involves a wet treatment with chemicals to remove the residual gums and other matter. This may be effected on the lines of the ordinary bleaching process which involves a series of treatments with solutions of sodium carbonate or hydroxide alternating with or followed by immersion in a bath containing sulphuric acid. In a description of experimental work carried out at the Georgia State Experimental Station (*American Dyestuff Reporter*, December 1941), preliminary washing of the fiber, followed by treatment with a mixture of 1 to 2% water solution of sodium carbonate and 2 to 6% of sodium sulfate for ½ to 2 hr. in a kier at 160° to 165° C., was said to give satisfactory results.

The final washing is best effected by spraying the material from above and below as it passes along an open lattice or wire conveyor. Surplus moisture is then expressed by rubber squeeze rollers, after which the fiber is dried out in a tunnel drier, from which it is delivered in a condition suitable for the cotton opener.

The successful processing of stapled flax fiber on cotton and worsted machinery depends almost entirely on the efficiency and uniformity of the degumming process. This has also an important bearing on the quality characteristics of the subsequent yarn and fabric. Drying should reduce the moisture content to 10 to 12%, which is normal to the fiber, otherwise difficulty will be experienced in the preparatory operations.

OPENING AND BLENDING. The fiber may now be opened on a hard-waste opener which separates the strands and reduces the average staple length slightly. This is followed by a run through a single-process opener. The laps of flax and cotton may be blended in any desired proportion on the finisher picker. As the stock passes through the card, the longer fibers are reduced in length so that the card sliver contains fibers of fair length uniformity. The sliver is drafted out in the usual manner on drawing and roving frames and is subsequently spun on a long-draft spinning frame.

(Continued on page 200)

Fig. 2. The wet-spinning frame, widely used in the spinning of linen yarns, is much more expensive to install and to operate than a cotton spinning frame. These expenses account for the present trend toward using cotton machines.

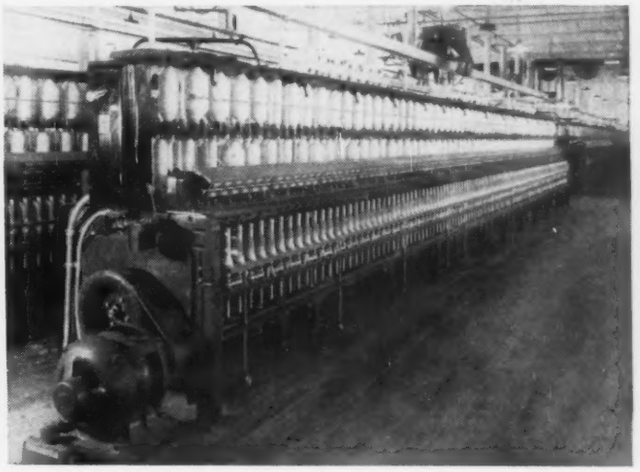


Fig. 3. The long-draft cotton spinning frame has been found adaptable to processing cottonized flax fibers.

Production-Control System Aids HOSIERY FINISHING

HIGHLIGHTS: *System of production control aids Chester H. Roth, Inc., in scheduling varied hosiery lots through finishing—Gray-goods records show perpetual inventory—Production planning at Duke Hosiery Corp. entails careful assimilation of technical data before lots are processed—Facilities for production tallies and costing are provided by system.*

What is Expected from Production Control?

THE DETERMINATION of inventories for contract termination focused the attention of the textile industry on the importance of production control. Knitting mills, with systems of control, determined their inventories easily, since the stock is under constant measurement. The postwar period now brings necessity for producing orders to customer schedules, or will shortly do so. Once again management will be confronted with the problem of coordinating sales, purchases, and production. This is a job for production control.

In the mill itself, orders must be scheduled and routed in the most economical manner; machinery must be fully occupied, yet balance, and sufficient supplies must be on time and in the right place. These are the mill functions of production control. Parallel to these functions and of greater over-all importance, is the constant requirement of low-cost operation.

Knitting mills began years ago to install methods of control. One of the first, and still the most widely used, is the simple job-ticket system in which perforated detachable coupons accumulate at work points as the order proceeds through the mill. Today, graphs and planning boards are also used. Shown on this page is a type of planning board for machine scheduling in a knitting mill.

Because Chester H. Roth, Inc., offers examples of large hosiery finishing plants which have production, storage, and distribution functions, TEXTILE WORLD believes that a description of its system will interest mills which are planning modification of existing control methods.—EDITOR.

PRODUCTION SCHEDULING and inventory of varied hosiery lots through the finishing plants of Chester H. Roth, Inc., are facilitated by a system of production control which is believed to be unique in the hosiery industry. This system results partly from the necessity of proper planning in any finishing plant and partly from the special character of the Chester H. Roth method of operation.

For example, two of the Roth subsidiaries, the Duke Hosiery Corp. at Hickory, N. C., and the Century Hosiery Mills, Inc., at Burlington, N. C., are finishing plants. They are surrounded by yarn and hosiery mills in the heart of the southern hosiery industry.

From the spinning mills the plants purchase yarns which are knit to Roth specifications by the neighboring hosiery plants. The knitted products, consisting principally of half-hose and children's socks, are dyed, finished, and packed at Hickory or Burlington, and then shipped direct to stores or other retail outlets.

Many varied lines of hosiery are processed; and because of this variety, the production departments must have complete and readily accessible information. Such details as specifications, lot numbers, status of orders, inventories, machinery balance, dyeing and finishing requirements, and schedules must be obtainable quickly.

TECHNIQUE USED. At the Duke Hosiery Corp., T. R. Kramer, the secretary, states that production planning for the varied lots of hose begins in the general office, but that the details are worked out by the superintendent, K. T. Williams, and the foreman. Hosiery specifications, of course, originate in the New York sales office.

To correlate these details, Mr. Kramer states that all data regarding the order are first obtained. Each order is then assigned a code number, and subsidiary numbers are given each lot of the order. The gray goods are received and recorded as shown in Fig. 1, and this record remains at the gray goods bin where the hose is stored. When lots are checked out of the bin for processing, the record is debited that amount and a balance of goods remaining is noted on the form. Thus, this is a perpetual inventory of gray goods.

Before goods are processed, all dyeing

A type of planning board which is used in many mills for machine scheduling purposes.

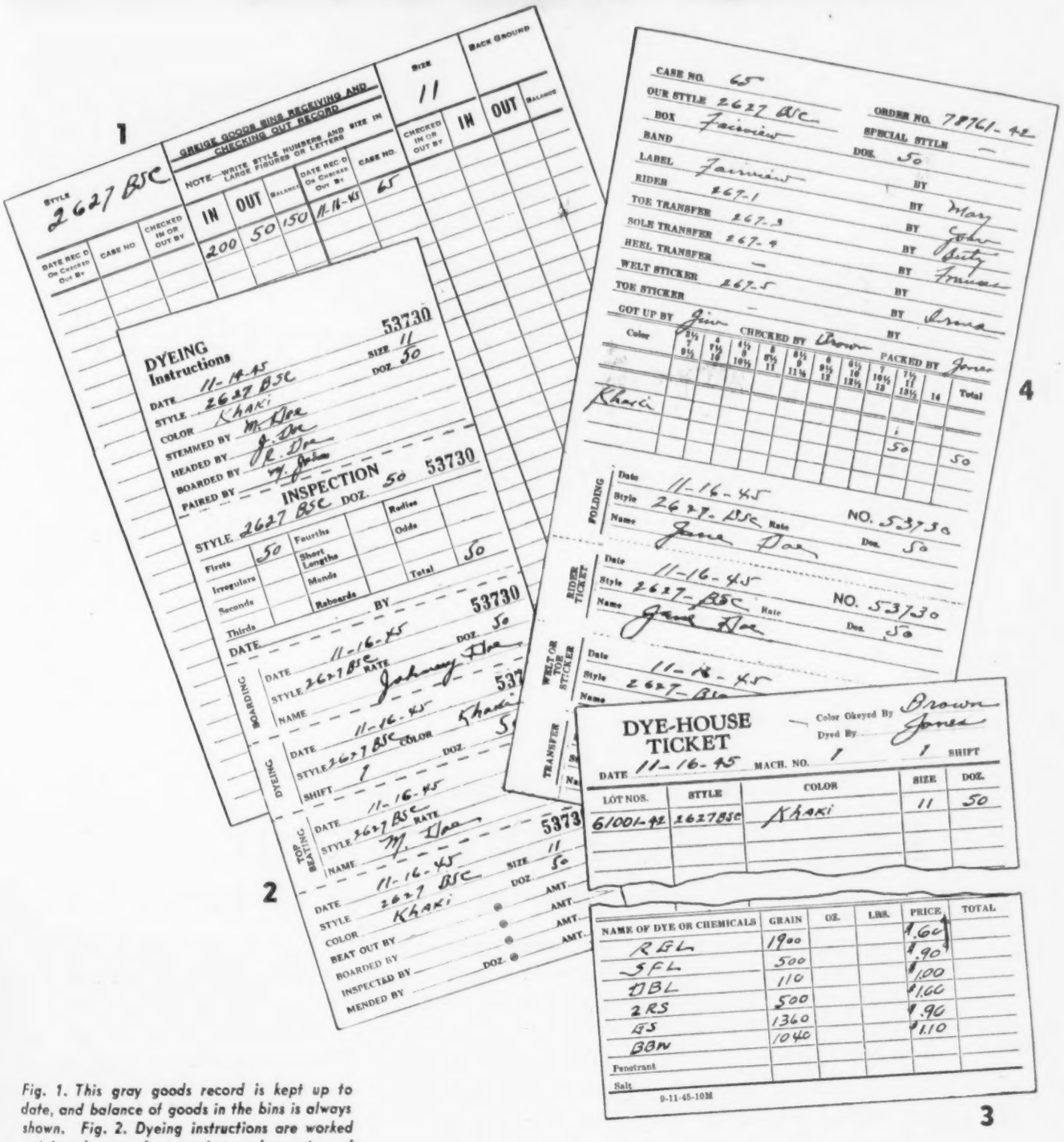


Fig. 1. This gray goods record is kept up to date, and balance of goods in the bins is always shown. Fig. 2. Dyeing instructions are worked out in advance of processing, and a system of production tallies for the lot insures accurate production figures. Fig. 3. The dye house ticket is a means of scheduling the work at the various dyeing machines. A handy method of dye costing is contained in this form also. (Figures are hypothetical, for illustration only.) Fig. 4. Details of riders, transfers, stickers, and box labels are worked out in advance and production tallies are kept at the various processes.

information must be assimilated and recorded as "dyeing instructions" on the form shown in Fig. 2. It will be noted that Roth dyestuffs carry code letters instead of proper names. The dyeing instructions ticket contains perforated coupons for inspection, boarding, dyeing, etc. These coupons, of course, are tallies which accumulate at the various processes for production-record purposes.

The next step transfers dyeing information to the dye house ticket shown in Fig. 3. Here lot numbers, style, color, size, and amount are recorded as the goods are dyed. In addition, this particular form contains a section where dye costs may be figured. (The cost worked out in Fig. 3 is hypothetical and for illustration purposes only.)

After pairing, the lot is stored in the dyed-stock bins. It is pulled out of dyed-stock storage by the form shown in Fig. 4. This form also carries all information concerning stickers, toe riders, transfers, and box labels. This is done beforehand, so that no lot will be delayed on any of these operations. Perforated coupons are also attached to this form for production records.

SUNOTEX PROCESSING OIL

Proves value of improved wetting-out and penetrating qualities

A large manufacturer was faced with the fact that his requirements for finished wool were outrunning supplies of basic materials and production-facilities. He decided to investigate costly losses in processing.

With the processing aids previously used, the mill had experienced waste that greatly reduced the yield. To study the problem, a Sun Textile man was called in. After analyzing their needs, a Sunotex Oil for processing was recommended.

With Sunotex Oil, used under the same operating conditions, the outstanding penetrating-qualities, plus the superior wetting-out properties of Sunotex are producing a 3% greater yield in the wool by weight . . . a pound free in every thirty-three. In addition, better scourability is producing cleaner wool and whiter finished stock.

Whatever your processing-problem . . . wool, rayon, or nylon . . . a Sun Textile man may help you improve both quality of product and production in your plant. His skilled services and expert knowledge, coupled with the products he has to offer, are yours to use for better efficiency. Write . . .

SUN OIL COMPANY • *Philadelphia 3, Pa.*

Sponsors of the Sunoco News-Voice of the Air — Lowell Thomas

SUNOCO **SUN INDUSTRIAL PRODUCTS**

OILS FOR AMERICAN INDUSTRY

STA Members Favor MACHINE MODIFICATIONS

HIGHLIGHTS: *Multi-motor drive for two-cylinder slasher costs nearly $4,000—Slow-motion drives increase picker cleaning 10%—Wooden-sleeve spinning spindles driven at 9,150 r.p.m.*

MULTI-MOTOR DRIVES for slashers permit more yarn to be placed on a beam and also permit warp stretch to be controlled more accurately, according to information revealed by mill men attending the meeting of the South Carolina Division of the Southern Textile Assn., at Clemson College, Dec. 1, 1945. The cost of beam, delivery-roll, and size-box drives for two-cylinder slashers was estimated at $3,700.

The installation of loom spreaders at Chiquola Mfg. Co. was said by R. L. Calvert, superintendent, to have permitted an increase of loom speeds to 177 and 184 picks per minute. Loom efficiency was unchanged but replacement of check straps was increased.

W. W. Aultman, assistant superintendent, American Thread Co., stated that the installation of slow-motion drives on pickers equipped with blending reserves had improved picker operation in his mill. Lap-meter tests showed that the drive increased the yards within limits by 4%, and waste tests revealed that cleaning increased 10%.

Spindle speeds of 9,150 r.p.m. were reported by W. C. Blakeney, assistant superintendent, Spartan Mills, as a result of the installation four years ago of wooden-sleeve spindles and paper tubes on spinning frames. Mr. Blakeney stated that shaking of bobbins has been eliminated, and that fewer ends down and less twist have been obtained with the spindle-tube assembly.

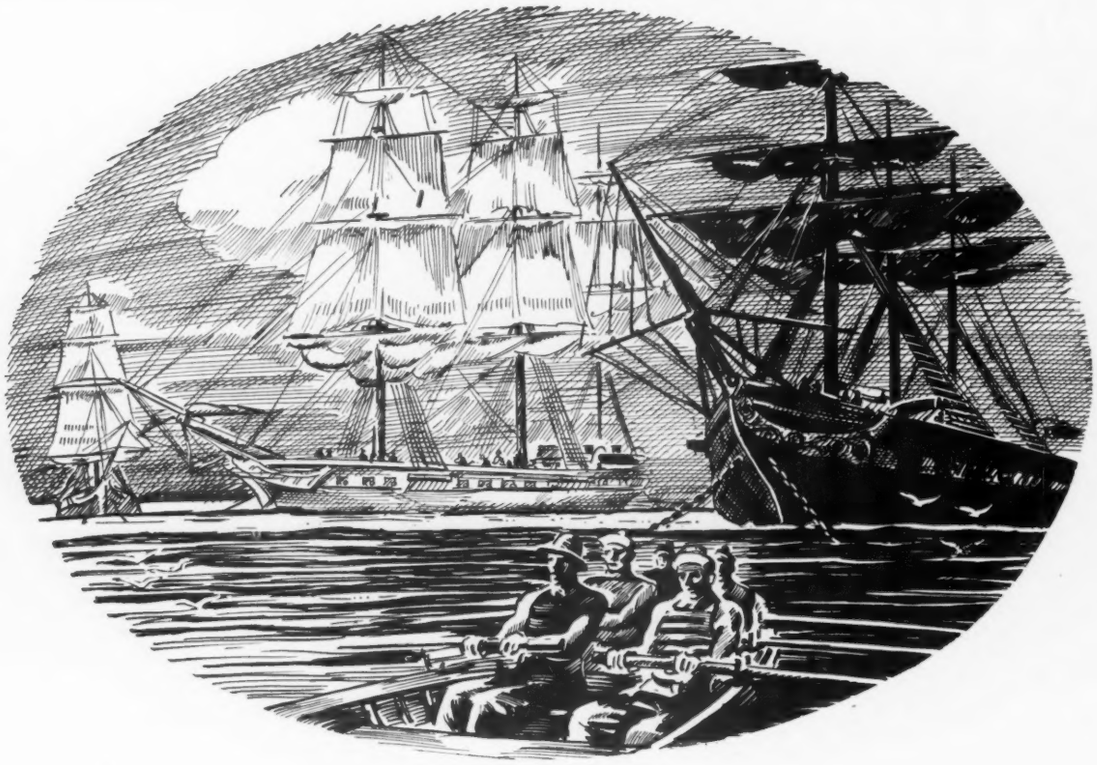
H. A. Shealy, superintendent, Olympia plant, Pacific Mills, said that one of the outstanding features of the spindle-tube assembly is the tapered spindle which permits better tube control when the frame is started. His plant began operating with paper tubes seven years ago; and after training doffers and other help to handle the tubes, the performance of the assembly has been satisfactory.

Fig. 1. Left to right: President-elect B. M. Bowen; Dean Herman A. Dickert, Georgia Tech Textile School; M. Weldon Rogers, retiring president; Marshall Dilling, executive-secretary; and Dr. Hugh M. Brown, Dean of Clemson Textile School.

STA OFFICERS ELECTED. At the thirty-sixth annual meeting of the Southern Textile Assn., held in Charlotte, N. C., Dec. 8, 1945, the following officers were elected: B. M. Bowen, Salisbury Cotton Mills, Salisbury, N. C., president; John M. Caughman, Spartan Mills, Spartanburg, S. C., vice president; Marshall Dilling, Gastonia, N. C., executive secretary; and Virgil E. McDowell, Roanoke Mills, Roanoke Rapids, N. C., chairman of the board of governors.

Members elected to the board of governors were: Harry Shealey, Pacific Mills, Columbia, S. C.; W. G. Huguley, Jr., Seminole Mills, Clearwater, S. C.; J. Y. Jones, Kendall Mills, Newberry, S. C.; W. Earl Crenshaw, American Thread Co., Clover, S. C.; J. V. Randall, Cartex Mills, Salisbury, N. C.; and Raymond E. Henderson, Riverside and Dan River Cotton Mills, Danville, Va.

Fig. 2. At the Clemson meeting, John M. Caughman, J. M. Cook, N. W. Hardie, and Joe C. Cobb inspect the Shirley Analyzer.



—back in 1820: When the total cost of the U. S. Navy (existing and authorized) was less than six million dollars and the Missouri Compromise became a law—the year the first patent for drying cloth by steam rollers was granted—John Butterworth established this business in Philadelphia to serve the Textile Industry. . .

And for 126 years we have continued to serve the Textile Industry . . . building bigger machines to increase productive capacity . . . designing new machines to meet special problems . . . helping the Textile Industry to grow from a handful of family-sized plants to its present position as America's Second Industry. We are proud to have played a part in its development.

Butterworth Service includes a complete line of Machinery for bleaching, mercerizing, dyeing, drying, printing and finishing fabrics and warps; calenders for cotton and rayon fabrics; spinning machinery for rayon filament yarns.

Butterworth Research keeps informed on the new developments in Textiles and Textile-finishing. Butterworth Engineering strives to interpret each new development in terms of Machine Design and Plant Arrangement. Write us.

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Cotton Mills Need Controls for DUST and HEAT

HIGHLIGHTS: *Cotton-textile work not inherently unhealthful—Cotton-mill fever preventable with suitable means of dust control—Studies needed of air velocities in dust collectors if greater efficiencies are to be obtained.*

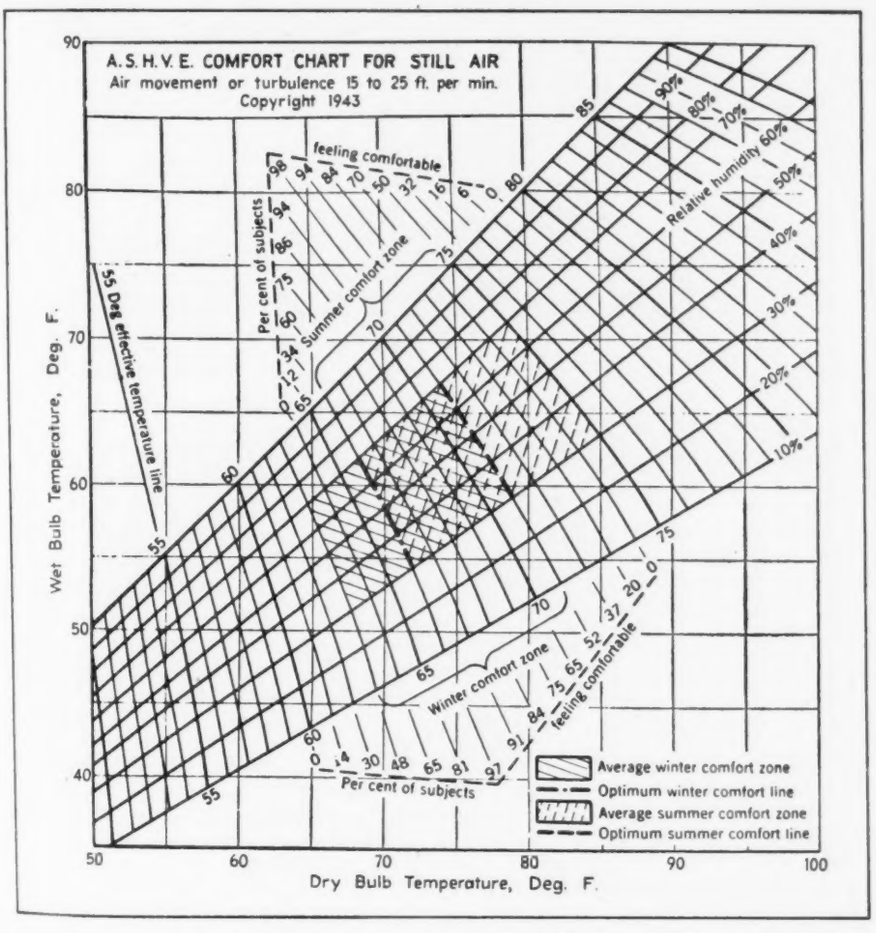
A.S.H.V.E. COMFORT CHART FOR STILL AIR
Air movement or turbulence 15 to 25 ft. per min.
Copyright 1943
feeling comfortable
Per cent of subjects
Summer comfort zone
55 Deg effective temperature line
Relative humidity
Wet Bulb Temperature, Deg. F.
Winter comfort zone
Per cent of subjects
Average winter comfort zone
Optimum winter comfort line
Average summer comfort zone
Optimum summer comfort line
Dry Bulb Temperature, Deg. F.

Fig. 1. Comfort chart prepared by American Society of Heating & Ventilating Engineers for air velocities of 15 to 25 ft. per min. Both summer and winter comfort zones apply to inhabitants of the United States only. Application of winter comfort line is further limited to rooms heated by central-station systems of the convection type. Application of the summer comfort line is limited to buildings in which exposure to atmosphere is greater than three hours, such as factories and homes. (From Heating, Ventilating, & Air Conditioning Guide—1945, Chapter 2)

DUST, LINT, HEAT, AND HUMIDITY are the greatest handicaps to human efficiency in the cotton branch of the textile industry, in which these conditions are inseparable from satisfactory processing of the cotton fiber.

A study of atmospheric conditions in the textile industry, made by Dr. Philip Drinker, Professor of Industrial Hygiene, Harvard School of Public Health, for the Division of Labor Standards,* recommends that the industry adopt a standard of 80° F. wet bulb as a maximum at which mills operate during the hot months of summer, as employees find atmospheric conditions with wet bulb readings above this standard practically unbearable. Also, mills should install cooling equipment for use in hot weather so that they can operate continuously. Prof. Drinker's study reveals that dust collectors should be used in place of dust rooms, but that data are needed to show how effective the dust collectors are under practical operations.

A study of production and collection of lint in the various processes following picking, judging from results obtained in other industries making such studies, will very likely result in improved working conditions and possibly in a reduction of seconds.

According to Prof. Drinker, there is nothing inherently unhealthful about the industry except the tendency to allow somewhat dusty conditions in certain processes, and hot atmospheric conditions in others.

HEAT AND HUMIDITY. Cotton-textile prices within past years have been considered too low to justify the high cost of cooling with mechanical refrigeration. Evaporative cooling is often used and is fairly common, especially in hot, dry climates. Mills in the United States today engaged exclusively in cotton manufacturing usually can warm the spray water in winter but cannot cool it in hot weather.

The efficiency of the worker begins to fall off when the dry and wet bulb exceeds certain combinations. Another factor, air motion, should be considered. The combination of these three factors has been assembled in a three-dimensional graph, Fig. 1, from which the relative importance of temperature and humidity may be determined. There is a seasonal and a geographical variation in the comfort zone shown on the graph. If conditions much above the hot zone exist, there is a sharp falling off in worker efficiency.

(Continued on page 176)

* *Atmospheric Conditions In Cotton Textile Plants, Spec. Bull. No. 18 of the United States Department of Labor Standards.*

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Germans Specialized on VISCOSE RAYON Fiber

HIGHLIGHTS: *U. S. technicians report efforts in Germany to improve viscose staple—Several other synthetics, not produced here, were manufactured—Allied Headquarters states much of Japanese rayon capacity lost.*

ALTHOUGH A HALF-DOZEN unusual synthetic yarns were produced commercially in Germany during the war, none attained any appreciable volume compared to the production of viscose rayon. Not even much acetate rayon was produced—according to reports made last month in Washington by the original Synthetic Fibers Team which investigated German synthetic fiber production on behalf of the Technical Industry Intelligence Committee (TIIC) after V-E Day.

Rayon production in Germany in 1943 reached 690,000,000 lb. of staple and 224,000,000 lb. of continuous filament yarn, according to D. B. Wicker, one of the two team members from the American Viscose Corp. He reported that considerable effort had been expended by the Germans to treat viscose staple to make it more resistant to wear and laundering, including formaldehyde and resin treatments, and to make it wool-like and water-resistant.

The Germans also tried to develop a flameproofing treatment for fabrics suitable for clothing, but were unsuccessful.

Only 2,950,000 lb. of acetate staple fiber was produced in Germany in 1944 with smaller amounts of cuprammonium staple, despite the interest in "Cuprama" (crimped) staple by worsted and woolen spinners. It is also known that the Germans produced two types of casein staple fiber, Thiolan and Thiozell, but details are unavailable since the only casein staple fiber plant is in Soviet hands. It appears that less than 2,000,000 lb. a year of staple fiber of the Perlon type were manufactured. The principal use of Perlon staple was as a 20% mixture with viscose staple to increase the life of men's Army hose. Approximately the same amount of an after-chlorinated vinyl-chloride fiber was produced by the Germans under the name of Pe-Ce. Uses of this fiber were limited, since it had a softening point of 80° C.

An extraordinary development for cake drying called a turbine dryer was reported by J. J. Schilthuis of American Enka Corp. and a member of the team. In it, cakes were transported on rods from the top to the bottom of a 40 ft. tower which accommodated 35,000 cakes. Total drying time was 72 hr., but the dryer did not yield a relaxed weaving yarn. The yarn, however, was suitable for tire-cord. Incidentally, tire-cord produced in Germany had a tenacity of only three grams per denier (considerably less than U. S. yarn). Apparently about 40 to 45 million pounds was the most obtained any year.

In addition to the Perlon and Pe-Ce fibers, the Germans produced polyvinylidene-chloride, polyethylene, and polyvinyl alcohol fibers. None of the three was produced in any quantity; and the three should be considered principally as experimental, according to Dr. J. B. Quig, one of the two team members from E. I. du Pont de Nemours & Co. In reporting on acetate yarns, Dr. Quig stated that while experimental work was carried out on high-tenacity acetate yarns, unsaponified and saponified, there was no production of these yarns as in Great Britain and the United States.

It appears that the Germans will have considerable difficulty in resuming any great production of synthetic yarns, because there will be some loss in change-over from war needs to more normal civilian needs, because a good portion of the installations have been damaged, and because of other factors, such as removal of machinery.

Synthetic Fibers Team

» Members of the original Synthetic Fibers Team of the textile sub-committee which reported in Washington last month were: Leroy H. Smith and D. B. Wicker, of American Viscose Corp., J. J. Schilthuis, of American Enka Corp.; and G. B. Hoff and J. B. Quig, of E. I. du Pont de Nemours & Co., Inc. Their reports can be obtained from Office of Publications Board, U. S. Department of Commerce, Washington, D. C.

JAPANESE STATUS. Japan probably will be even slower than Germany in resuming production of synthetic yarns, according to recent reports made to the Supreme Allied Headquarters by the Japanese Ministry of Commerce & Industry. Before the war, Japanese rayon production exceeded that of the United States; but by the end of the war, roughly three-fourths of its capacity had been destroyed or otherwise put out of operation. Only six of 25 plants producing continuous-filament rayon remain and only 14 of the 31 staple fiber plants can be operated. (Five plants produced both continuous-filament and staple rayon.) It was estimated that only 100,707 silk and rayon looms remain of a prewar total of 313,312. Thus it seems that Japan is very seriously crippled both as to fiber production and cloth manufacture. This is considered to be one of the principal reasons why there is great interest in developing rayon production in India.

GERMAN COTTON INDUSTRY

Only 5,160,000 out of 7,372,000 cotton spindles remain in the American and British occupation zones, according to figures from the U. S. Department of Commerce. Before the war Germany had 10,200,000 spindles; accordingly, in what is now the Russian zone there were originally about 2,800,000 spindles. The Soviet claims that it lost 2,300,000 spindles due to the war, and apparently reparations in kind will be insufficient to replace Russia's losses. The inference is that today's German cotton-spinning capacity is about half the prewar total.

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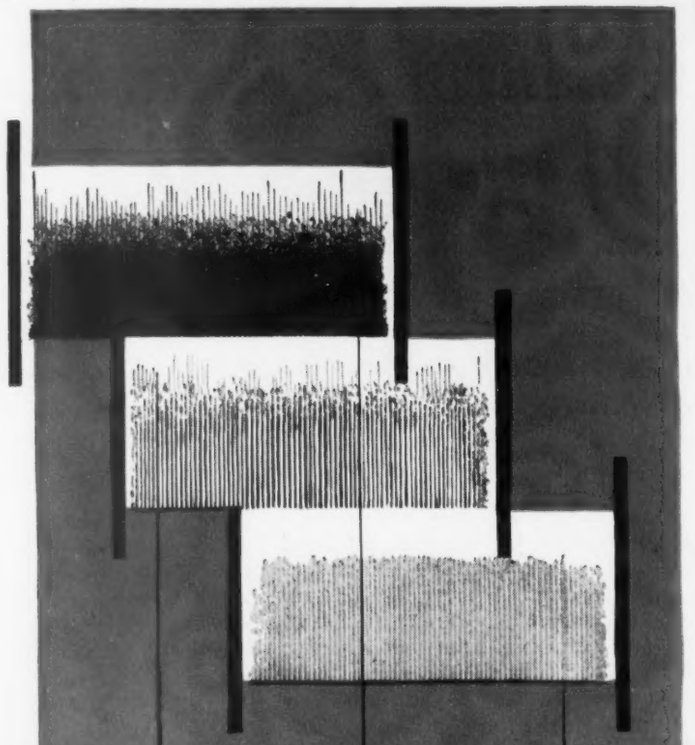

A TYPICAL DOW BATTLE AGAINST MOLD

Manufacturers bothered by mold problems may learn a profitable lesson from textile weavers.

When fabric is woven, warp yarns must be stiff to enable the shuttle carrying the filler yarns to pass through without abrasion which causes wear and possible fracture of the yarn. To make it stiff, yarn is subjected to a process called "slashing" which consists of running it through a solution containing starch and oil. Naturally, the mixture is subject to mold and bacterial attack but, in addition, yarns sized with it may also be affected causing loss in tensile strength and possible discoloring due to mold stain.

Dow technicians experimented, tested, experimented more, tested more—and presented the answer . . . Dowicide. Today, this effective product protects slashing solutions . . . better fabrics woven by the textile industry are proof of another victory in the never-ending battle against mold.

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SLASHING and WEAVING Discussed by Georgia Men

HIGHLIGHTS: *Synthetic-rubber coverings for back squeeze rolls favored by one mill—Infrared drying said to present slashing control problems—A relative humidity of 40 to 50% recommended for jacquard weave rooms.*

MILL EXPERIENCE with some of the latest techniques in slashing and weaving was cited by the Textile Operating Executives of Georgia in their first postwar meeting, held Nov. 24, 1945, at the Georgia School of Technology, Atlanta, Ga.

Nine questions on slashing and nine on weaving, circulated among the members prior to the meeting, were answered from the floor by some of the approximately 200 members attending. The panel on slashing was conducted by Joe L. Jennings, superintendent, Fairfax Mill, West Point Mfg. Co., West Point, Ga.; and the weaving panel was conducted by W. H. Gibson, superintendent, Martha Mills, Thomaston, Ga.

A resumé of some of the questions and answers follows:

Q. Give the results obtained by using synthetic-rubber coverings on squeeze rolls.

A. One mill reported that it tried the coverings first on the finishing squeeze roll and later on the back-squeeze roll, and obtained better results with the back rolls covered. Two other slashers have been equipped with coverings for the back rolls. One advantage cited for synthetic-rubber coverings was long life.

Another mill tried them but had difficulty in getting the correct density of slashing size on the yarn.

INFRARED DRYING. Q. Give any experience you have had with infrared drying.

A. One mill had used infrared lamps on warps containing 3000 ends of 11s yarn, but the lamps did not sufficiently dry the size. Another mill reported that the infrared burners it used did not go out promptly enough when the slasher cylinders slowed down or stopped and did not come on as promptly as they should when the slasher was starting up.

Q. What is the best method for tinting warp yarn?

A. Mills with experience in tinting warp yarn favored the practice of introducing the tint in a second size box. It was stated that no difficulties resulted from this method.

Q. What advantage, if any, is there in using wax in size?

A. One mill, using 1½ lb. of wax to 150 gal. of size, reported that it obtains smoother wraps. It found that the wax does not interfere with bleaching the cloth.

Q. Why do more warp-thread breaks occur near the selvages than in the middle of the warp? What can be done to reduce this breakage?

A. The high proportion of breaks near the selvage is due to the increased contraction of the woven cloth at that point. Three corrective measures were given: (1) hold out the edges of the cloth near the warp shed, (2) make sure the loom is not picking early, and (3) inspect the beam heads for damaged places.

Q. What type of humidifying equipment is best for a jacquard weave room? What relative humidity should be maintained?

A. Mills which have jacquard weave rooms reported that central-station systems give the best results. A relative humidity of 40 to 50% was recommended.

NYLON STIMULATES NO-SEAM

Scott & Williams, Inc., presented the product of its postwar 400-needle circular machine at the St. Regis hotel in New York last month. Features of the nylon stocking, besides the absence of a seam, were a gusset in the toe and a newly designed square heel.

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Dispersed Acetate Colors Best for DYEING NYLON

HIGHLIGHTS: *Acid, direct, vat, azoic, and chrome colors also being employed to limited extent—Changes in techniques frequently necessary when applying dyes to nylon—Colors obtained may differ from those found on older fibers.*

FROM THE DYERS' STANDPOINT, the dispersed acetate colors are at present the best for nylon, but in the future they undoubtedly will be replaced by other types possessing superior fastness, according to A. K. Saville, of E. I. du Pont de Nemours & Co., Inc., speaking at a recent meeting of the Philadelphia Section of the American Association of Textile Chemists & Colorists. In addition to the acetate colors, acid, direct, vat, azoic, and chrome colors are employed for dyeing nylon. However, new advances in dyes and dyeing techniques are necessary before nylon can be dyed with the ease with which the older synthetic fibers are colored. An abstract of Mr. Saville's talk follows:

The dispersed acetate-rayon dyes may be used on nylon from an aqueous dyebath set with soluble oil, soap, or other dyeing assistants normally used for the dyeing of cellulose-acetate rayon. The goods are entered at 100° F., the temperature is raised to 180° F. in 15 min., the dyeing is continued at this temperature for 45 min. to 1 hr., and a rinse in warm water completes the operation.

In general, the properties of the same dispersed-acetate dye on the two fibers are approximately the same. However, some differences do occur. Shade variations between a dye on nylon and the same color on acetate are particularly apparent in the reds and oranges, the shades being considerably duller and bluer than on acetate rayon.

If combinations of acetate colors are chosen on the basis of good working properties on acetate rayon, there should be no difficulty in applying them to nylon. In light and medium shades, the dyebath exhausts to much the same degree on nylon as it does on acetate rayon. As depth of shade is increased, however, the percentage of color exhausted falls off more rapidly on nylon than on acetate. Nevertheless, if care is taken to choose colors which build up heavy shades on acetate with facility, no trouble should be encountered in producing all but the heaviest shades on nylon.

FASTNESS VARIES. The fastness properties of the dispersed acetate dyes on nylon differ somewhat from the fastness of the same dyes on acetate rayon; the difference in fastness varies with the individual colors. In general, the fastness to light of the acetate colors on nylon is slightly inferior to the same colors on acetate rayon. The fastness to washing of a given color (as determined by three consecutive 10-min. washes at 120° F. in the presence of 0.5% soap) is slightly higher on acetate rayon than on nylon. In other fastness tests, such as fastness to water and to acid or alkaline perspiration, substantial agreement between the fastness properties of the colors on nylon and acetate rayon is found.

In one property, however, the fastness between dyed nylon and cellulose acetate differs markedly. When cellulose acetate dyed in blue or violet shades is exposed to gas fumes or stored in the presence of atmospheric oxides of nitrogen, pronounced color changes occur, with the development of a pink tone in the dyed material. On the other hand, for all practical purposes, nylon dyed with acetate blues may be considered gas-fume resistant.

DIAZO BLACK. Diazo black can be applied to nylon in the manner described for direct-dyeing types, but if the amount of sodium nitrite and hydrochloric acid normally suggested for the diazotization and development of these colors on acetate rayon is used, reddish-black shades are produced. Increased time of diazotization effects an improvement, but it has been found that better results are to be obtained by doubling the customary quantities of sodium nitrite and acid employed. After dyeing, the goods are rinsed and diazotized for 30 min. in a cold bath containing 3 lb. of sodium nitrite and 7 pt. of 32° Twaddle hydrochloric acid per 100 gal. of liquor and, after rinsing, developed in a cold developing bath containing 4 to 5% of Acetamine Developer AD made slightly acid with acetic acid. The temperature of the bath is slowly raised to 140° F. and development continued for 30 min. By this method, full shades of blacks with properties similar to the properties of acetate rayon so dyed are produced.

Light shades can be readily produced on nylon with any acid color from standard dyebaths. In general, however, the leveling or acid-dyeing types on wool have low saturation points on nylon and

(*Continued on page 174*)

Fabric that REFLECTS COLOR

New plastic fabric called glamé invented by Maurice Brule and woven at his Central Falls, R. I., plant is made from regenerated cellulose manufactured by Sylvania Industrial Corp. Brule spent 7 years perfecting the fabric which weighs only 4 oz. per sq. yd. One problem was bringing the slit cellulose warp threads through the loom in a flat position. Initial fabric produced was used to make a 9-story stage curtain for Radio City Music Hall, New York.

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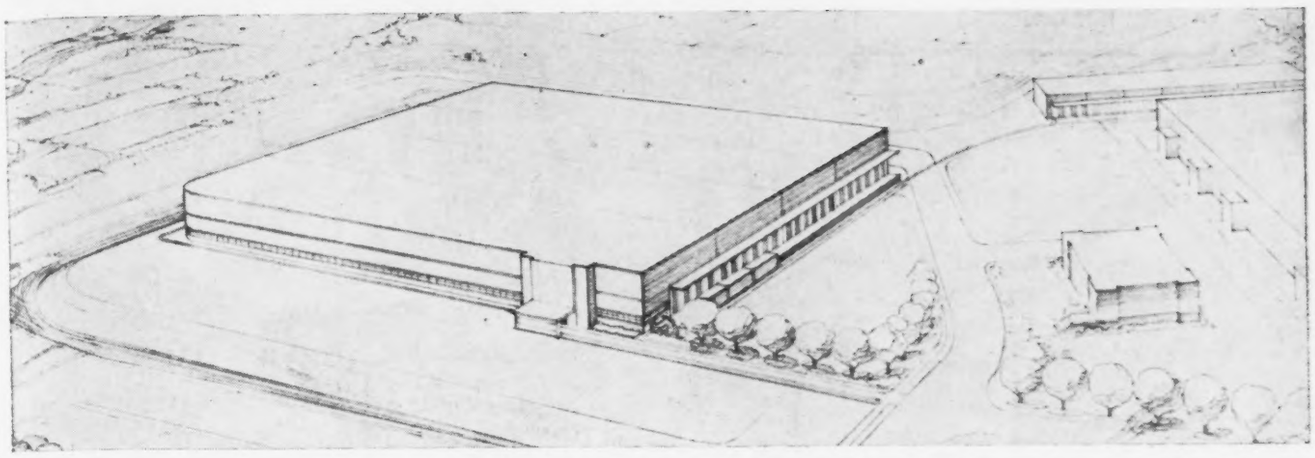


An architect's drawing of a modern textile mill, combining the best features of windowless buildings with glass window sections and glass blocks.

Should Textile Mills Be WINDOWLESS?

HIGHLIGHTS: *Developments in air conditioning and in lighting have made possible the application of windowless buildings in the textile industry—Cleanliness, stabilized temperature, and reduced maintenance advantages.*

By ROY A. PALMER
Duke Power Co., Charlotte, N. C.

FOR MANY YEARS there has been considerable discussion on the part of engineers, architects, and industrialists about windowless buildings. There is much to be said both for and against buildings of this type. A frank discussion of the subject is healthy because it stimulates thinking and aids progress.

PURPOSE OF WINDOWS. Windows, of course, provide ventilation and daylight inside a building. Then, too, the psychological aspect of being able to observe the outdoors is perhaps an important feature from the standpoint of the employees in the plant. It has been good business sense to utilize as much daylight as possible. Industrial plants with large areas of glass space have accomplished this and they also have provided an atmosphere of up-to-dateness to which employees, as well as the general public, have reacted favorably.

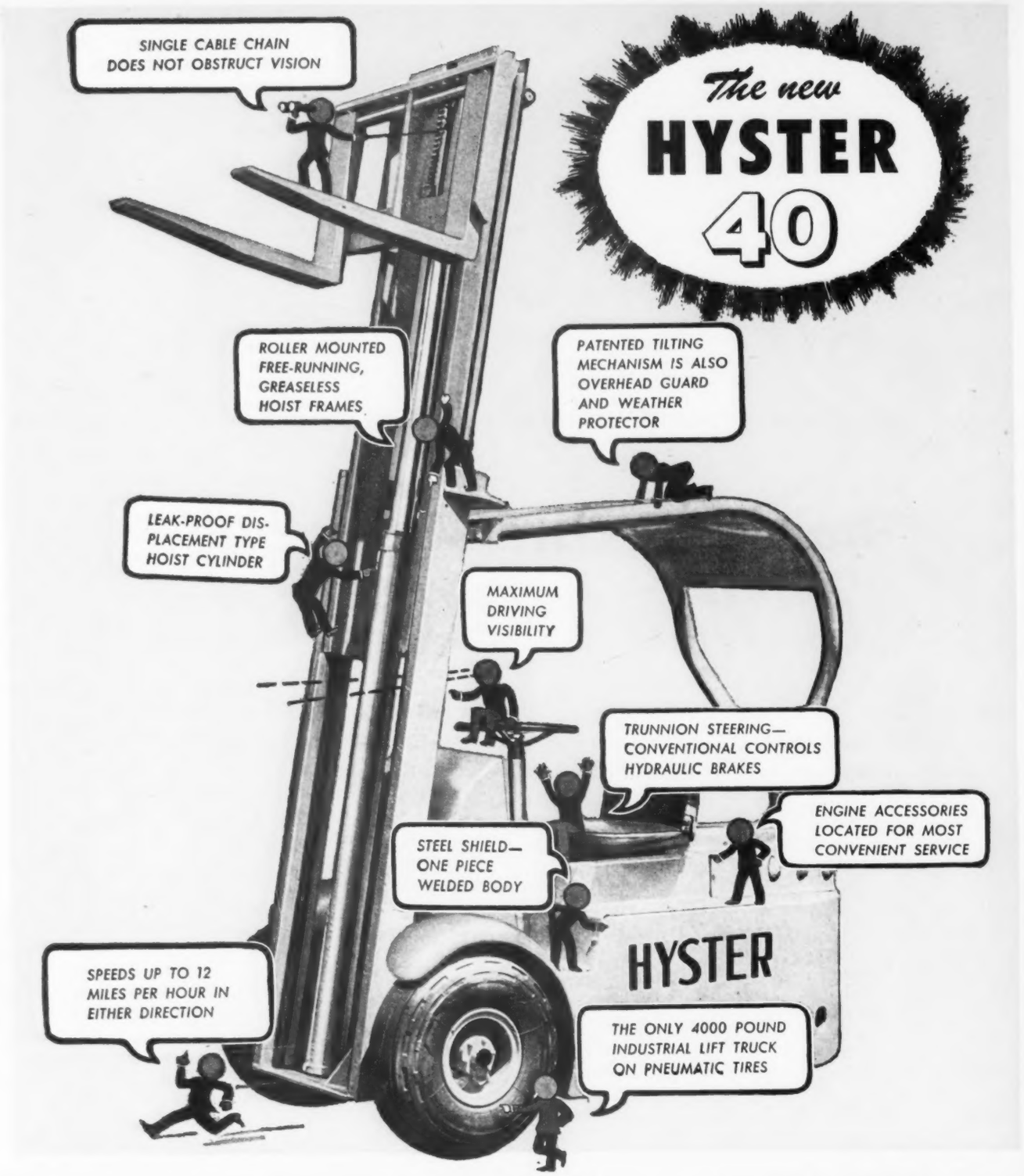
Ever since transparent glass has been available, windows have been as much a part of a building as the walls or any other structural feature of the building. It is difficult to break away from such a long-standing tradition. It takes courage to embark upon a new type of construction when time-honored practice has established such deeply ingrained habits. Adventure into an unknown field may be costly, both from the standpoint of employee morale, as well as from financial investment in the building. Before the war, as well as during the emergency, a number of highly successful windowless buildings were constructed.

ANALYSIS OF FEATURES. It is a foregone conclusion that air conditioning or mechanical ventilation is a necessity in a building without windows. When air-conditioning is installed in an old building, windows are usually fastened permanently so that they cannot be opened in order that the air-conditioning system can operate to best advantage. A solid wall without windows reduces the exposure areas so that not only is a lower capacity air-conditioning system needed, thus reducing capital investment, but also less capacity is required in the heating system. Moreover, the cost of operation of both air-conditioning system and the heating plant is reduced and temperatures can be maintained more uniformly throughout the building.

Coincident with air conditioning, there results the well-known advantage of cleanliness and reduced maintenance costs. Filtered air keeps outdoor dust and soot out of the work rooms. Obviously, with cleaned air constantly entering the room, there is less need for frequent cleaning and painting. With little or no window areas, the washing of windows and replacing broken glass is eliminated. The investment in awnings or curtains is likewise avoided as well as the constant maintenance which goes with those items.

Advocates of windowless buildings point out the reduction of noise as a decided advantage. This may seem to be ridiculous in a weave room of a textile mill, but it nevertheless is a valuable feature in offices of the mill where passing trains, autos and trucks, storms and other disturbing noises may be present. Inspection rooms and similar places where machine noises are not present, are considerably improved when other distracting noises are minimized. It should be possible to reduce noise in weave rooms considerably by acoustical treatment and by proper mounting of looms.

Construction costs are always a major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consideration, especially at the present time with its higher material and labor costs. Engineers point out that the cost of constructing four solid walls to enclose a building is less than that of similar walls with considerable areas framed for windows. Sawtooth construction is admittedly the highest cost mill-type building. The chief reason for using this construction is presumably to provide daylight uniformly throughout the mill. In almost all cases, however, the use of daylight is thwarted because the windows are eventually painted blue to reduce glare. Maintenance of the windows and repairs necessary for prevention of leaks further increase the cost.

Designers of windowless buildings claim a double advantage in that all land area can be better utilized because of elimination of court areas to provide light and because of complete utilization of interior floor area. Artificial light provides illumination uniformly throughout the entire floor area, hence machines and work centers can be placed in accordance with convenience and with the flow of production. The flexibility in arranging machines, inspection tables, and other items is claimed to be a vital force in speeding production and in reducing costs.

DAYLIGHT COSTS MONEY. Several years ago, L. L. Holladay, General Electric Co., in a paper in the *Journal of the Franklin Institute*, outlined a detailed study of the cost of lighting in several types of industrial buildings. It was pointed out by Mr. Holladay that daylight costs money when provided indoors. The cost of windows and accessories such as shades, awnings, etc., as well as added heating-plant capacity, light courts, and maintenance are all chargeable to indoor daylight costs. This study showed that under average conditions, the annual cost of electric lighting, in relation to natural lighting, varied from 2.25 for a single-story flat-roof building to 4.03 for a saw-tooth building. These ratios would, no doubt, be changed today, but with the advances made in the last several years in artificial lighting, there is no question that artificial lighting now costs no more and perhaps less than indoor daylight did when those studies were originally conducted.

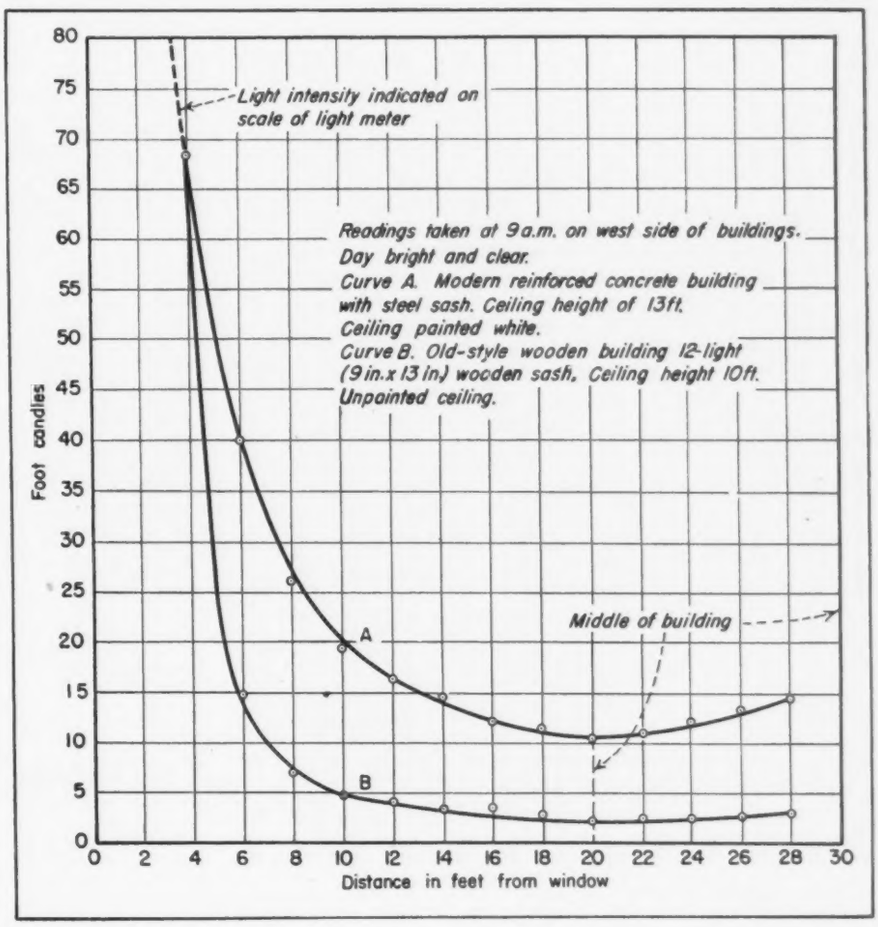
The two main features which make windowless buildings possible are air conditioning and artificial lighting. With the trend toward windowless buildings, it is reasonable to expect that any industry contemplating new buildings in which there will be air conditioning, should consider those without windows. A study of their construction, operating, and maintenance costs should be made. The textile industry with the extensive utilization of tempered and humified air perhaps has an unusual opportunity for using such buildings.

The advent of fluorescent lighting is further encouragement toward providing constant, adequate, and uniform illumination over every square foot of floor space in a mill. When there is more than one shift working, good lighting is a "must" because every shift uses artificial light a good portion of the time. On winter days when it is cloudy, daylight is inadequate. On bright, sunny days, the effectiveness of daylight drops off very rapidly as the distance is increased from the windows even where large areas of windows are provided. The accompanying chart shows how daylight measures in both an old building with small windows and in another building of up-to-date steel and concrete construction with large windows.

The lack of uniformity in daylight is costly, to say nothing of its short duration in winter months. In the summer radiant heat is another hindrance.

To provide workers with clean air at proper temperature and humidity, in a room which has been acoustically treated to minimize noise and is illuminated with plenty of uniform, cool fluorescent light, is a good talking point for engineers and architects who favor windowless buildings for the textile industry. The complaint as to the "closed in" feeling on the part of employees seems to be a minor argument. That feeling is never considered by any of us when we go to the theater; almost all retail stores must depend upon artificial light because there are no windows which provide effective daylight. In fact, in many industrial plants, the windows are painted to control the glare. Also in some plants the executive offices are located around the outside walls of the building, thus shutting off those windows from the work rooms.

Successful examples of windowless, or partially windowless, buildings in the textile field are: the Carter Fabrics plant at Greensboro, N. C.; the Oakhurst plant of Hudson Hosiery Co., Charlotte, N. C.; and Excelsior Mills, Clemson, S. C.



Intensity of lighting at various points of a mill building at different distances from the windows. Differences between an old-style wooden building and a modern reinforced concrete building are illustrated by curves.

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HIGHLIGHTS: *Production increases from 42 to 64 yd. per min. when infrared equipment supplements existing drying facilities—Over 2 lb. of water per kwh. removed from cloth.*

PRODUCTION INCREASES up to 50% have been obtained when using infrared equipment as a supplementary source of heat for textile drying jobs.

One such installation, in which a 50% speed-up is obtained by using tunnels of 500-watt infrared lamps through which the printed cloth is passed, is installed in a large textile plant producing bags. Fabrics used in some of the bags are printed in colorful designs. These bags are used by certain grain and feed suppliers who cater to the farm trade, as the colorful patterns affect sales quite positively. The women folk on the farm re-use the printed bags for aprons, dresses, curtains, etc.

Fostoria infrared equipment is used to speed-up drying of the various colored patterns after the cloth has passed through the printing machine. Prior to the installation of the infrared equipment, drying was done entirely by steam.

A partial view of the printing machine and the 16-ft. infrared drying zone can be seen in Fig. 1. Installation of the infrared equipment required no changes in handling of the cloth.

The installation has resulted in approximately 50% speed-up of printing and drying on all of the various patterns. Before installing the infrared equipment, one typical pattern was printed and dried at the rate of 42 yd. per min. With the infrared drying used in conjunction with the steam dryers, 64 yd. per min. are produced.

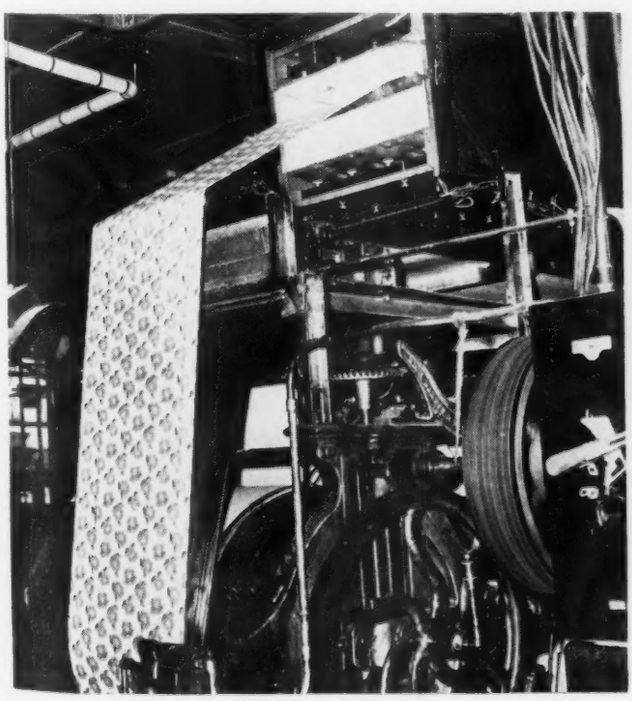
An end view of the infrared tunnel, Fig. 2, shows four lamps in the cross-section. The cloth is subjected to radiation from the top and bottom by separate banks. A total of 144 500-watt lamps make up the installation. Lamps are of the clear glass type, using gold plated reflectors to gain highest efficiency from the energy input. Figures indicate that slightly over 2 lb. of water per kwh are dehydrated from the cloth. Total connected load for all lamps is 72 kw.

The infrared equipment is connected with throw-out switches so that when the press is stopped the lamps turn off automatically.

The pattern shown in Fig. 2 is printed at the rate of 110 yd. per min. with infrared, 75 yd. per min. without infrared as a drying aid. This photograph shows the cloth prior to entering the infrared drying zone.

This installation illustrates some of the advantages of infrared equipment in the textile industry. Steam methods sometimes create bottlenecks in the textile plant. More often than not boilers are loaded to capacity, so production speeds are governed by the energy available. When extra steam is available and it is possible to get extra energy, it is often necessary to rebuild machinery to allow for the addition of steam cans —all of which is expensive and time consuming.

In this case, the infrared equipment was installed on an existing machine with no major alterations. The cost of such an installation is reasonable compared with the expenditure which would have been necessary to install additional steam facilities to gain the 50% production increase.



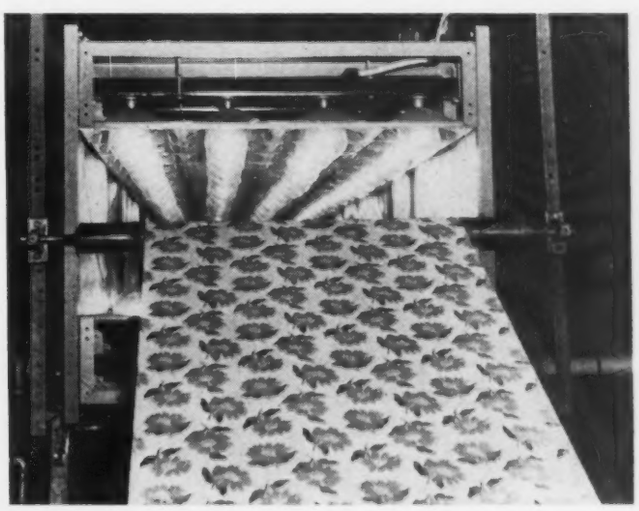


Fig. 1. After leaving printing machine, cloth passes through a 16-ft. tunnel banked top and bottom with 500-watt infrared lamps.

Fig. 2. Lamp banks consisting of 144 500-watt infrared bulbs remove about 144 lb. of water from cloth in one hour's time, consuming 72 kw. of power.

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Strong Yarns Require Special FILLING BOBBINS

HIGHLIGHTS: *Pressure causes warping, splitting, and sticking—Cheaper to replace with bobbins of better design than to produce defective cloth and have loom stoppages—Cost of bobbins themselves is slight—Supervisors can keep down total bobbin costs.*

By H. E. WENRICH

SINCE THE DEVELOPMENT of strong and semi-strong yarns, many new problems have confronted management in the processing of yarns, among which the increased impairment of shuttle bobbins has become a sizable factor in weave room costs.

There are many reasons why bobbins must be discarded. Of course, every foreman who is cost-concious will take advantage of every opportunity to get the utmost service from bobbins. But, occasionally, a few foremen will overdo the question of cost-reduction and keep bobbins in use that should have been discarded long before. A slightly damaged bobbin may cost several hundred times its value when allowed to be kept in use, because of the defective cloth it causes.

When to discard a bobbin may seem at times to be a knotty problem. Inspection for damage should be rather simple. Winder-hands should lay aside all bobbins showing warping, cracks, burred tips, and other defects. Then a capable supervisor should go over these discards and make final decisions.

The various bobbin manufacturers have developed and produced hundreds of bobbin types for weaving every yarn from cotton to glass; and as new yarns are originated, a new bobbin can be almost an assured actuality. For this reason, no doubt, we have the many bobbin types available today. But, do supervisors take advantage of these many specialized bobbins? Incredibily, not.

In fact, pick out one of the bobbins in your own weave shed and see how old the design is. It would almost be certain that even efficiency experts making a time-study analysis of the average weave shed would scarcely recognize such a trifling object as the shuttle bobbin. Would you believe that the protuberances, the smoothness, or the rounded serrations of a bobbin would have any influence upon the quality of the fabric? If not, it would certainly be worth while to spend a few days in a weave shed, especially when the looms are being changed from one type of yarn to another, and check on loom shut-downs due to shuttle bobbins.

NO STANDARDIZATION. The attainment of standardized bobbins would enable the fabricator to make large savings in first costs and for replacements; but, unfortunately, no such possibility exists, as a certain bobbin used successfully on wool would prove a dismal failure on 55-den. acetate.

Does the fabric being woven require a specified finish on the bobbin, such as shellac, oil, oil and shellac, enamel, baked enamel, or a special preserving oil? And could a certain wood produce better results? If so, which would serve the purpose: dogwood, beech, birch, maple—or would a paper construction do? Each type has several advantages; which would be advantageous to you?

One of the toughest problems to consider is ordering a complete changeover of bobbins to replace bobbins in use. This would require that additional stock be carried, perhaps in an already limited stockroom. The main question here, however, would not be the storage of idle bobbins but the cost of changeover. Some foremen would consider such an outlay in cash as useless. But consider this: first cost is not the entire cost of the bobbin, nor the highest cost.

The price of bobbins is a trifle when looked at on the basis of the price the bobbin costs when new. The price is exorbitant when the bobbins are the source of defective cloth.

The wrong kind of bobbin, as well as a damaged bobbin, will often produce a run of rough cloth, sloughed-off filling, slugs, broken picks, and various other cloth defects. For instance, the usual

This bobbin of yarn was so seriously damaged in removing it from the filling winder that the operator must use the shuttle to requill before sending the filling to the weave room.

coating of varnishes or lacquers often chip, leaving small openings such as cracks or broken-out sections that snare the filling yarn. The ringlets on the bobbins might also snare the unwinding yarn and cause considerable trouble. For some yarns, a smooth surface will allow the filling to slip too readily and will result in sloughed-off filling and broken picks.

Important though it is, the problem of taking out of work hundreds of thousands of usable bobbins on a changeover is difficult to explain in specific terms. But if bobbins are damaged and causing numerous cloth imperfections, their responsibility can be pin-pointed.

WARPED BOBBINS. An overall condition of damaged bobbins can often result from the quilling of nylon, high-tenacity rayon, and monofilaments. These strong yarns will squeeze the bobbin barrels with so much force that

(*Continued on page 182*)

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BLEACHERS AND DYERS know the importance of a de-sizing agent that can be used in wide ranges of temperature and pH. This is especially true when working with variables in sizing formulas and water. De-sizing would be simple if these factors were constant.

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New Era in Textile Chemistry Hailed at AATCC Meeting

HIGHLIGHTS: *"Victory Convention" draws large attendance to hear program which features peacetime applications of wartime achievements—New finishes, machines, and test methods exhibited—Dr. Milton Harris receives the Olney Medal Award—Intersectional contest won by Rhode Island Section.*

THE "VICTORY CONVENTION" of the American Association of Textile Chemists & Colorists held in New York Jan. 3 to 5 drew a large attendance and put into the record many facts which can be utilized by textile manufacturers for new products or for improvement of old products. The Silver Jubilee convention will be held Dec. 1 in Boston, Mass.

The associations' research program was appraised by William D. Appel, president of AATCC. Peacetime applications of war developments in textiles were covered by a group of speakers including Dr. F. Bonnet, Dr. Harold De Witt Smith, Prof. E. R. Schwarz, William Lee, and Dr. D. H. Powers. Reports were also heard from technical experts lately returned from investigations in Germany.

Exhibits of fabrics, machines, and new test methods filled the parlors adjoining the convention hall. An innovation was display of equipment and work by AATCC sub-committees on research.

Six papers upon research projects were offered on behalf of the various local sections in a prize contest. Several of these are summarized here. First prize was awarded to the Rhode Island Section.

EFFECT OF SLASHING ON SYNTHETICS. When synthetic yarns are stretched while wet and heated, a certain degree of molecular reorientation occurs within the fibers which is not obvious from a casual inspection and which does not result in an immediate breaking of the filaments. A study under the direction of John E. Bell, of Cleveland Cloth Mills, was reported by Hobart Southers, Proximity Mfg. Co., at the AATCC meeting on behalf of the Piedmont Section. The report has particular reference to the stretching incurred during slashing or sizing of synthetic warp yarns.

Tests made on 75-den. cellulose acetate yarn show that, in general, the loss in total elongation is relatively proportional to the actual slashing stretch until a maximum of 10 to 12% is obtained. If the yarn is stretched beyond this point, the loss in total elongation is less than the total stretch. It is noted also that the tensile strength of the yarn does not suffer; in fact, in most cases it increases slightly. Similar tests on medium and high-tenacity viscose rayons show a similar effect. Here, however, the correlation between stretch in slashing and loss in total elongation does not go beyond the 6% limit; and tests made on yarn stretched 12% or more show the loss in total elongation to be much less than the yarn has actually been stretched. Nylon shows a decrease in total elongation of 2.8%, when stretched 3% in slashing, a further increase of only 0.2% when stretched 6%. It shows a loss in total elongation of only 5% after stretching 12% in slashing. Fortisan, with an original total elongation of only 5.7% drops to 2.4% when stretched 3% and shows a considerable loss in strength.

Similar tests were made on rayon staple yarns. Somewhere between 5 and

Milton Harris Awarded Olney Medal by AATCC

DR. MILTON HARRIS, director of research, Milton Harris Associates, Washington, D. C., was awarded the Olney Medal at the annual banquet of the American Association of Textile Chemists & Colorists, Jan. 5, at Hotel Pennsylvania, New York. The award, which is made by the AATCC for outstanding achievement in the field of textile chemistry, is named in honor of Dr. Louis A. Olney, president emeritus of the association.

Dr. Harris was formerly director of research for Textile Foundation and Textile Research Institute, and at one time was research associate of the AATCC. During the war a large part of his work has been for the Quartermaster Corps, much of it on the determination of materials and clothing construction for various climates. He was a member of several important Government committees.

Preceding the presentation of the award, Alban Eavenson, past president of the association, and Prof. Harvey A. Neville, head of the department of chemistry and chemical engineering, Lehigh University, paid tribute to Dr. Harris in two brief addresses on "The Medalist, the Man," and "The Medalist, the Scientist." Presentation was made by Alfred P. Howes, of Howes Publishing Co.; Emmett J. Driscoll, chairman of the New York Section acted as toastmaster.

In accepting the medal Dr. Harris spoke of the great unrest in the textile industry and called upon technologists to assume the research leadership of the industry. In this connection, Dr. Harris said in part:

"There appears to be little doubt that it is the task of the technologist to assume the technical leadership of the textile industry and to map the technical paths for management. Before the technologist can assume this leadership, he must not only acquire a sound understanding of the technical problems, but also of the relationship of these problems to at least his phase of the industry. In other words, he must be able to bridge the gap between the practical concept and the scientific principle; and in order to do this, he must be suitably trained or must train himself.

"Contrary to popular opinion, the country is not going to be presented at this time with many revolutionary textile materials or fabrics. The war simply accelerated the lines of work indicated earlier, but it will take all of our postwar efforts to bring these developments to their successful conclusion. Truly, it is difficult to find a more exciting or fruitful field of research for chemist, physicist, engineer, or physiologist. I predict that any technologist who is ready and willing to understand the industry will find opportunities and scientific stimulation equal to those in any industry today."

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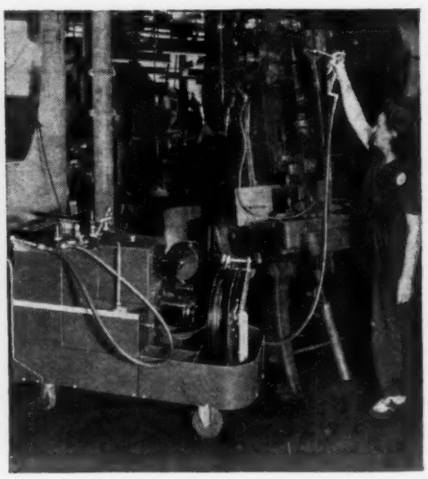

Pushed like a perambulator, the new Alemite Lubrikart is designed for one person operation. Dimensions: 21" wide, 55¼" long, 39" high. Mounted on five-inch Bassick ball bearing casters. It is able to travel between rows of machines or anywhere in a plant where space is limited. It saves time because of less frequent returns to the oil storage room by the oiler.

High pressure lubrication is made available by simply plugging in the electric cord. The high pressure hose and electric cord are mounted on automatic spring return reels which permit freedom of operation 20 feet in any direction. The unit is also equipped with hand operated equipment for servicing hydraulic systems, oil reservoirs, gear housings and for filling oil cans and grease guns.

Positive lubrication is assured, neglect is ended because proper lubricants and equipment are brought to the point of use. The electric high pressure pump develops 4500 lbs. grease pressure. Other equipment includes hose reel, hose and hydraulic coupler; gear lube and oil containers; compartments for oil cans; space for fittings, tools, waste, etc. Write for complete details.

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10% of slashing stretch, the strength begins to drop. In the case of 2-ply yarn, the strength, after stretching 10%, is still appreciably higher than the original strength of the yarn. In singles yarn the strength, after stretching 10%, is less than it originally was.

If a yarn is permitted to retain at least 15% of total elongation, it can withstand all of the mechanical effects incident to processing. Therefore, before any specifications are adopted covering the amount of stretch that can be given any yarn, the original elongation must be known and its reaction under conditions incident to stretching must be determined.

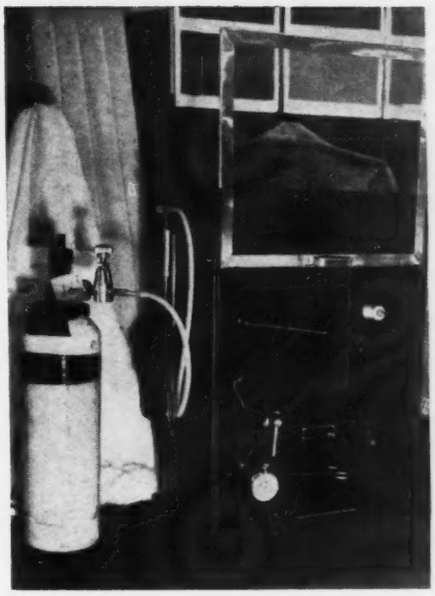
FLAMMABILITY TESTING. Evaluation of fabrics as to their flammability by testing devices and procedures was discussed by Charles W. Dorn, of J. C. Penney Co., Inc., for the New York Section, in part as follows:

"Everyone knows that the ordinary garments which we wear will burn. It is also well known that all garments do not burn with equal rapidity. Those fabrics which have the individual fibers exposed as in a pile, or as tufts in chenille, or as in the loosely matted or brushed out fabrics, ignite easily, flame up, and burn rapidly. Densely knit or woven cellulosic fabrics are much more difficult to ignite; and when ignition does occur the actual burning is relatively slow.

"To protect the public from buying garments, and materials intended for garments, which ignite easily and burn rapidly and are therefore a personal fire hazard, has been the aim of legislators and their legislation. Legislation recently was passed by the State of California which outlawed certain types of flammable fabrics and a Federal Bill HR2496, based on the original California law, has been sent to Congress.

"At the time the California law was passed, no satisfactory test method had been devised for determining flammability. With Federal legislation looming ahead, it was imperative that some action should be taken to develop a suitable testing method. As the National Retail Dry Goods Association was fully aware of the seriousness of this condition, it requested the AATCC to investigate test methods. A special AATCC subcommittee was appointed to study flammability of consumer fabrics, and this committee set about devising apparatus on which tests could be made. Lest Congress enact some unwise legislation, the NRDGA arranged for an unofficial hearing in the Washington office of Congressman Leroy Johnson, of California, sponsor of the Federal bill, where members of the special committee demonstrated the tentative test apparatus. The point was stressed that any flammability legislation without a good test method could not effectively be enforced.

"From tests made of many types of fabrics by the proposed tentative method, it can be concluded that: (1) wool, silk, nylon, Vinyon, and Velon fabrics offer no flammability hazard. (2) Cotton is just as flammable as regenerated rayon under identical construction and testing conditions. (3) With cotton having a normal moisture content of 6½%, as compared to regenerated type rayon with 11%, it is reasonable to conclude that cotton will come to the critical point more rapidly than rayon. (4) If the samples of any one fabric are all in identical condition as to moisture content and physical condition of the face being tested, close correlation of results within one laboratory and in any other laboratory can be arrived at. (5) Certain coated fabrics, although generally slow to ignite, burn with a violent flame which is difficult to extinguish and therefore offer a very definite hazard."



Apparatus developed by AATCC committee to test and rate flammability of a textile sample. Stop watch records time from flame-application to burning of thread at top of inclined plane on which sample rests. This is typical of the work done by numerous AATCC committees on test methods and research.

EFFECTS OF RESIN TREATMENT. The mechanics of zone control in resin finishing was described by Kenneth P. Monroe, for the Northern New England Section, in part as follows:

"Striking and valuable contrasts in properties of the finished textiles are obtainable by controlling the zoning of the resin finish either within or around and on the textile fibers. The two extremes of such zoning are: (1) when the resin is distributed uniformly in or throughout the whole fiber; and (2), when the resin is restricted to a limited zone of the treated fiber, as, for example, an exterior sheath of resin in, on, and around the fiber.

"Application of the resin, either in or on, creates no essential dimensional aberrations when compared with the control fabric. Thus, it may be con-

(*Continued on page 190*)

Effect of Different Types of Dyestuffs on Rate of Deterioration of Cloth Exposed to Weathering

Table presented by Matthew T. Barnhill, of Avondale Mills, for the Southeastern Section.

That the resistance of cotton fabrics to weathering is increased when they are dyed with some types of dyestuffs and decreased when dyed with other types is revealed by recent research work. This investigation indicates that in general naphthol-dyed fabrics deteriorate more rapidly than undyed bleached fabrics; cloth dyed with sulphur, light-fast direct, and diazotized and developed dyestuffs possesses a resistance to deterioration greater than the undyed fabric; vat-dyed cloth is about equal to, or slightly more resistant to, deterioration than the undyed fabric. There does not seem to be any mathematical relationship between fabric deterioration from weathering and the color fading that takes place.

A single cut of 3.60-yd. sheeting (which had been singed, desized, kier boiled, and chlorine bleached) was equally divided into six pieces. One piece was retained as an undyed control sample. The remaining five were dyed with blue dyestuffs to give as nearly as possible the same depth of shade.

The following table shows the warp breaks in pounds of fabric exposed at Birmingham, Ala., over seven two-week periods:

Fabric	Unexposed Original	Samples taken at two-week intervals						
		4/14	4/28	5/12	5/26	6/9	6/23	7/7
Undyed Bleach	52.8	46.1	42.0	38.5	34.4	31.3	29.0	22.9
Naphthol Dyed	50.4	45.5	41.9	35.9	30.6	26.0	22.0	17.7
Vat Dyed	50.4	47.4	45.3	40.8	38.0	32.6	27.7	21.5
D. & D. Dyed	54.6	48.6	34.9	40.0	37.5	36.4	34.9	22.1
Sulphur Dyed	53.6	52.0	48.9	51.5	45.3	40.4	37.6	31.6
Light-Fast Direct Dyed	49.4	48.4	46.4	43.1	40.5	33.8	32.7	29.1

(Viscosity determinations confirmed the results obtained by warp breaks.)

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3 . . . DOES NOT DRIP

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5 . . . WASHES OUT IN THE FINISHING NO MATTER WHAT FIBER IS WORKED

Point by point, check the general-purpose lubricant you are now using in your machines. It may be doing a perfectly good job of lubricating. But is it easily washed out in the finishing process? If it isn't, then you must either change the lubricant to suit the fiber being worked or take a chance on having high stain losses in the finished goods.

This isn't necessary when you use Shell Textilis Oil 34K. For in addition to its finer lubricating qualities, it also washes out in the finishing process, regardless of fiber being worked.

Shell Textilis Oil 34K is but one of a complete line of lubricants designed specifically for each type of textile machine lubrication. Many textile manufacturers have found it worth their while to talk to one of our Shell Lubrication Specialists about their textile lubrication problems. Why don't you?

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TEXTILE Equipment NEWS

Powder Film Replaces Back Gray in Printing

A new technique in textile printing which consists of replacing back grays with a specially embossed blanket treated with a film of powder to facilitate the removal of excess color from the printing rolls and the back of the cloth has been developed by the Dewey & Almy Chemical Co., Cambridge 40, Mass.

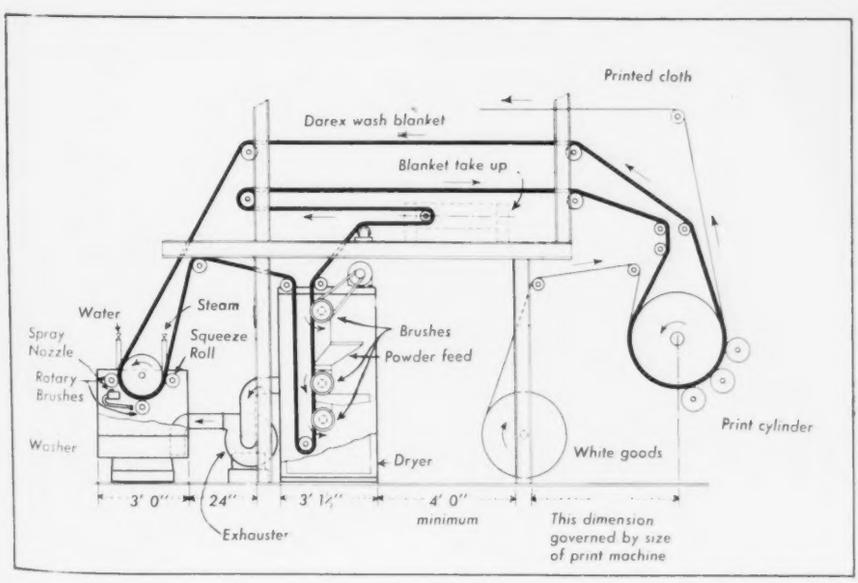
The two primary advantages said to be derived from the use of the new method are: (1) the powder absorbs the film of moisture remaining on the printing blanket after the washing operation, thus eliminating the necessity of means for heat-drying; and (2) excess color is absorbed by the powder and can be more easily removed in the blanket wash.

The new process can be used on a standard printing machine by installing the company's Darex blanket washer and dryer. The face of the blanket is covered with longitudinal grooves (about 50 per in.) which tend from each edge toward the center of the blanket and form a V at their points of juncture. These grooves are large enough to permit excess color to creep away from the printing selvage but are too small to form an impression on the printed fabric.

The washer consists of two brushes and a squeeze roll. When the blanket leaves the printing rolls and travels to the washer, its surface comes into contact with a rotary brush operating in a direction reverse to that of the blanket. This brush removes or loosens the film of powder on the blanket. Water is sprayed on the blanket at high pressure (40 lb. minimum for gum colors and 80 lb. minimum for pigment colors) to remove the talc and color. A second rotary brush scrubs the wet blanket to complete the cleaning operation, and excess water is removed by a cloth-covered squeeze roll.

The dryer is a compact unit consisting of three rotary brushes and a powder applier. The first of these brushes removes any water remaining on the blanket, the second applies the talc to the blanket, and the third brush removes excess powder and smooths out the powder film.

Patterns ranging from simple stripes to blotches are being printed at production speeds as high as 200 yd. per min., and it is said that a considerable saving in color is being made. The life of the Darex blanket is estimated at 2 to 5 million yards.

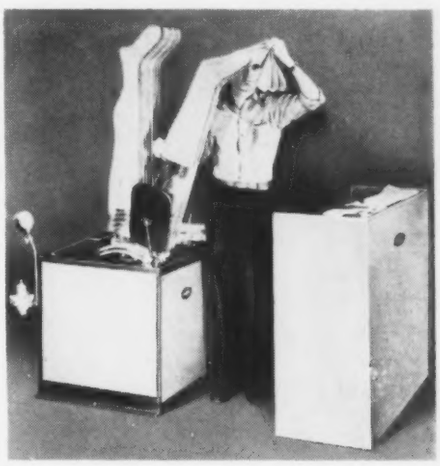


The washer and dryer can be used in conjunction with any standard-width printing machine, and the Darex blanket can be provided in any desired length. A 31-yd. blanket is said to be adequate for handling up to eight colors. (Dewey & Almy)

Hosiery Boarding Unit Air-Cooled For Comfort

A high-speed hosiery finishing machine, equipped with a control for steam pressure and heat and utilizing 12 forms, is being manufactured by Paramount Textile Machinery Co., 538 So. Wells St., Chicago 7, Ill. The machine is air-cooled for the comfort of the operator, and vents at the bases of the forms direct cool air upward to the drying areas.

The machine is constructed as a complete operating unit and includes an "all-in-one" cabinet equipped with a piling shelf, wet-goods trough, and wet-goods truck. The unit occupies a floor space of 6 ft. by 4 ft. 3 in.



The forms may be swung outward in groups of three to permit three-at-a-time stripping. (Paramount)

Single Knob Controls Reversing of Motor

A reversible-motor control which directs the running of a reversible motor clockwise or counterclockwise has been announced by the Yardeny Engineering Co., 105 Chambers St., New York 7, N. Y. The control action consists of turning a knob on the control box in

The fine and coarse feature of the control can be provided to suit a particular need. (Yardeny)

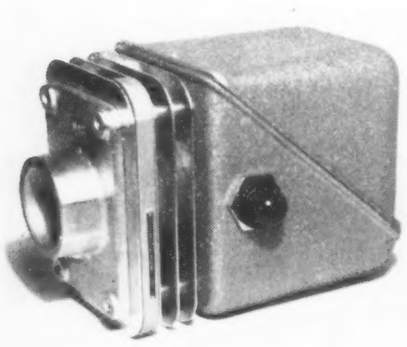
the direction desired for the motor to run.

Slow clockwise rotation of the control knob results in a corresponding motor motion in small increments. Slow counterclockwise rotation of the control knob causes reverse motor rotation in small increments. Rapid rotation of the control knob causes faster motor motion and more extended travel. By depressing the knob and turning it slightly to the right or left, continuous forward or reverse rotation of the motor can be accomplished. The Yardeny Pulsing Drive works on all standard currents and frequencies.

Photoelectric Alarm Warns of Flame Failure

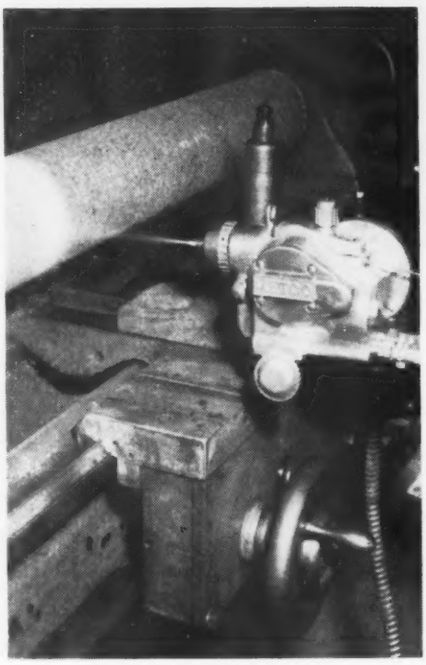
A flame-failure safeguard for use in connection with oil and pulverized-coal burners is being manufactured by the Combustion Control Corp., 77 Broadway, Cambridge 42, Mass. Known as the "Fireye," the photoelectric safety device cuts off the fuel and sounds an alarm when the flame fails.

The safeguard consists of a phototube and amplifying system encased in an aluminum housing. It is attached to the furnace by a 2-in. pipe connection which also serves as a sighting tube. Filters protect the unit from dust and heat.



The front of the Fireye control should be located within 5 ft. of the flame. (Combustion Control)

Metal-Spraying Gun Mounted on Machine



A built-in feed pump lubricates the continuously operating gun. (Metallizing Engineering)

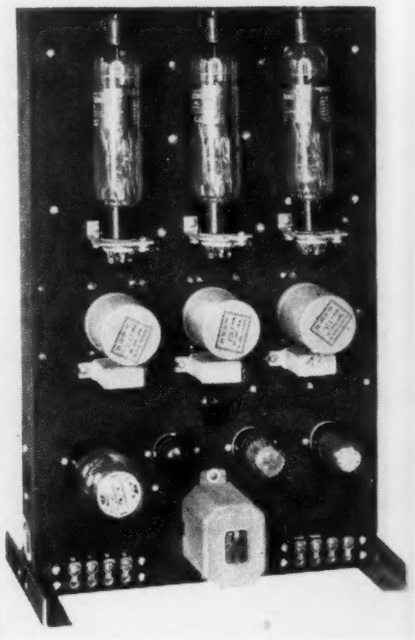
A metal-spraying gun which can be mounted on a machine and operated continuously has been announced by the Metallizing Engineering Co., Inc., 38-14 30th St., Long Island City 1, N. Y. The gun uses a $\frac{3}{16}$-in. wire as a metal supply and operates with an acetylene pressure of 15 lb. per sq. in.

The Type Y gun is said to be more heavily constructed than the company's hand guns; and the size of the gears, worms, and bearings has been increased to minimize wear and replacement.

Variable-Speed Drive Has Electronic Control

A new variable-speed drive in which speed is controlled electronically has been announced by the Submarine Signal Co., 160 State St., Boston 9, Mass. It is being marketed under the name "Servotron."

The drive operates on alternating current, and the electronic controller is said to run a direct-current motor at any variation of speed within the capacity of the motor and to maintain uniform torque over the entire speed range. The drive eliminates the necessity for changing gears. It is equipped for braking and reversing.

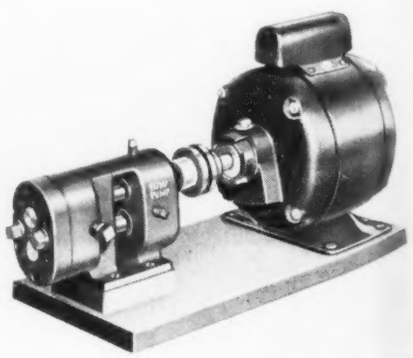


The Servotron will be available in load capacities ranging from 1/50 to 5 hp. (Submarine)

Pump Impels Liquids At 60 to 480 Gal. per Min.

A low-capacity high-pressure pump for handling thin liquids up to 500 lb. pressure and viscous liquids up to 1000 lb. pressure is being built by the Bump Pump Co., La Crosse, Wis. A constant flow, regardless of pressure, is possible in any capacity from 60 gal. per hr. to 480 gal. per hr. by changing impellers.

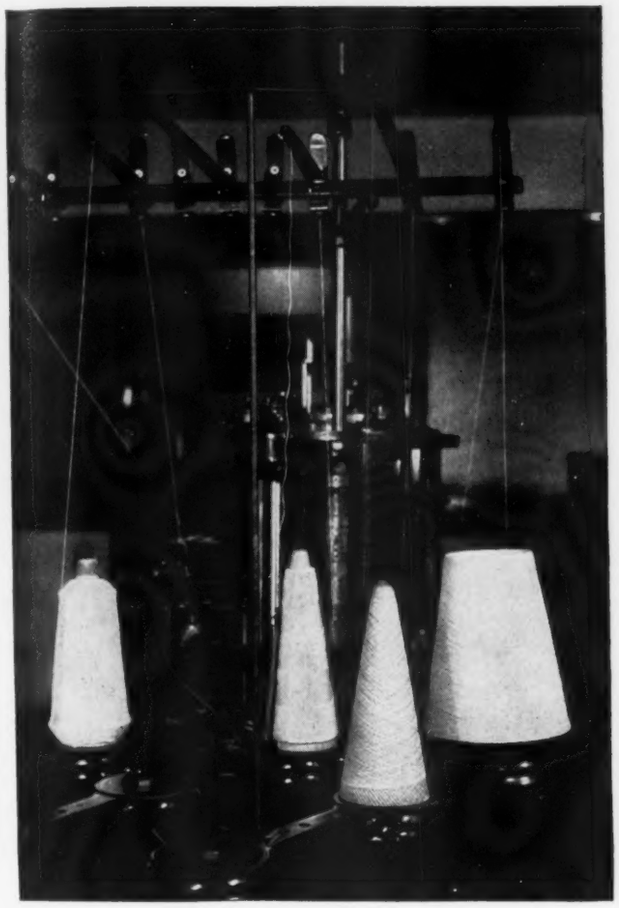
The pump can be directly driven by a standard-speed motor, furnished for



The Pump may be driven by a motor operating at 1200 to 1800 r.p.m. (Bump Pump)

SONOCO CONES

at work



Four different Yarns on
Four different Cones at
Four different stages of delivery

Cotton, Rayon, Nylon, Silk—any of the synthetics—coarse or fine, hard or soft twist, for knitting or creeling—free delivery to the last turn, is the final test of the right cone for the right purpose.

And the right cone surface in combination with the correct cone shape is what spells the correct answer.

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intake and discharge at the side or at the face plate, and mounted vertically or horizontally.

The foregoing description of the low-capacity pump is reprinted from the November issue, accompanied by the correct illustration, since the illustration used in November was not correct.

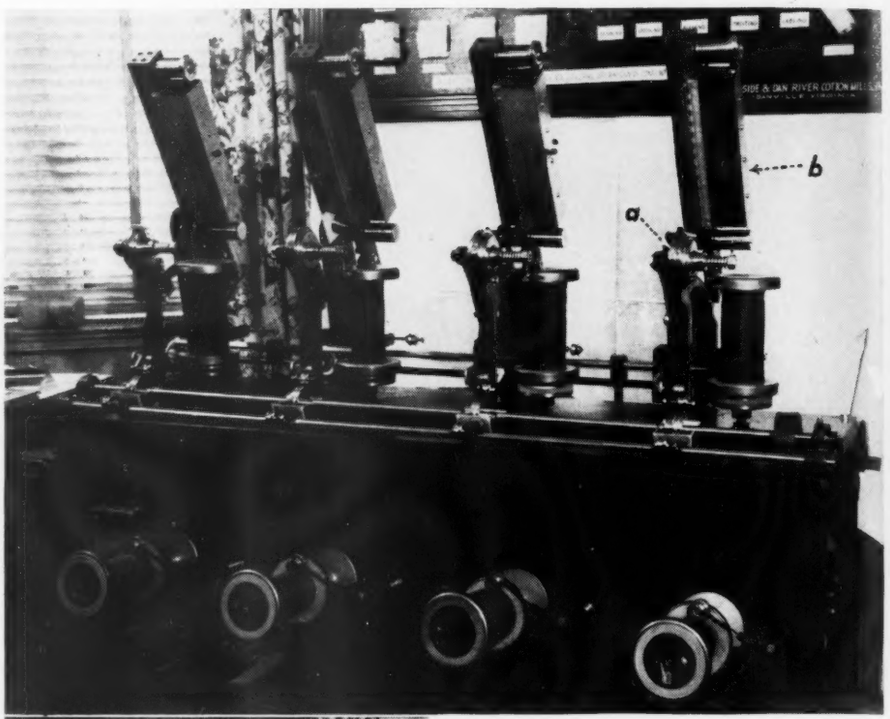
New Overhauling Device Makes Use of Bead Level

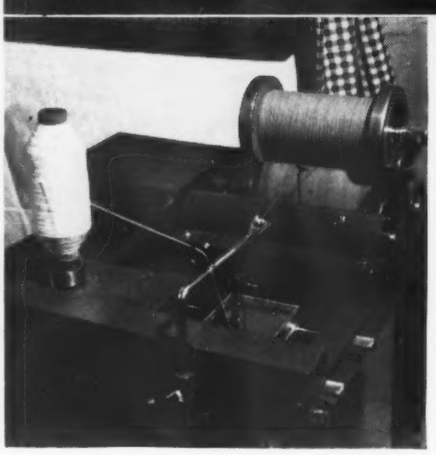
A patent for overhauling devices for lining and leveling frames and looms by means of stands supporting a straight edge or a taut wire to which a bead level is attached has been applied for by W. H. Pearman, Lexington, N. C.

When used for leveling a frame crosswise (Fig. 1) one stand is fastened to each side of the machine; and the straight edge supporting a sliding level is placed in the vertically adjustable forks which form the upper part of the stands. If the frame is not level, the leg of the samson that is low should be raised until the bead shows level.

In leveling the frame lengthwise (Fig. 2) a stand is fastened in the first weight-lever hole at each end of the frame. At one stand there is a small inclosed box containing a spool of steel wire, the take-up and let-off of which is controlled by a ratchet wheel and pawl. The wire is extended to the stand at the other end of the machine, where it is engaged by a jam nut fastened to an adjusting screw activated by a hand lever. With the ratchet wheel and pawl holding the other end of the wire, the adjusting screw can be tightened until the wire between the stands shows level on a

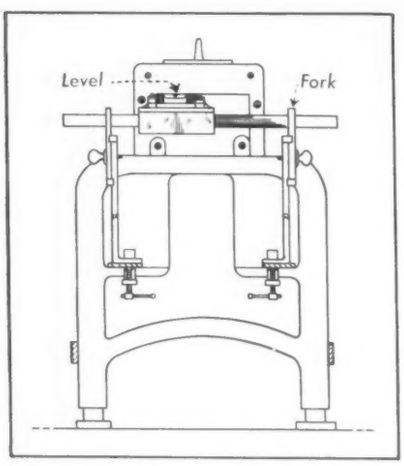
Fiber-Bonded Process Eliminates Spinning





Machinery for treating roving with a bonding agent to eliminate the spinning process and to permit greater utilization of fiber strength was on display at the recent Victory Convention of the American Association of Textile Chemists & Colorists in New York. The process and machinery were developed by Riverside & Dan River Cotton Mills. Machinery will be built by Walter Kidde & Co., Bloomfield, N. J.

The first unit, left, subjects the roving to a wetting bath consisting of a synthetic-resin fluid and, if desired, a pigment dye. After the roving has aged approximately 24 hr., it is placed on the curing machine, above. Tension for pulling the fibers into compact position for curing is applied by a pair of adjustable discs, a. The roving is run several times around the heating unit b, the temperature of which is controllable by a thermostat. (Kidde)



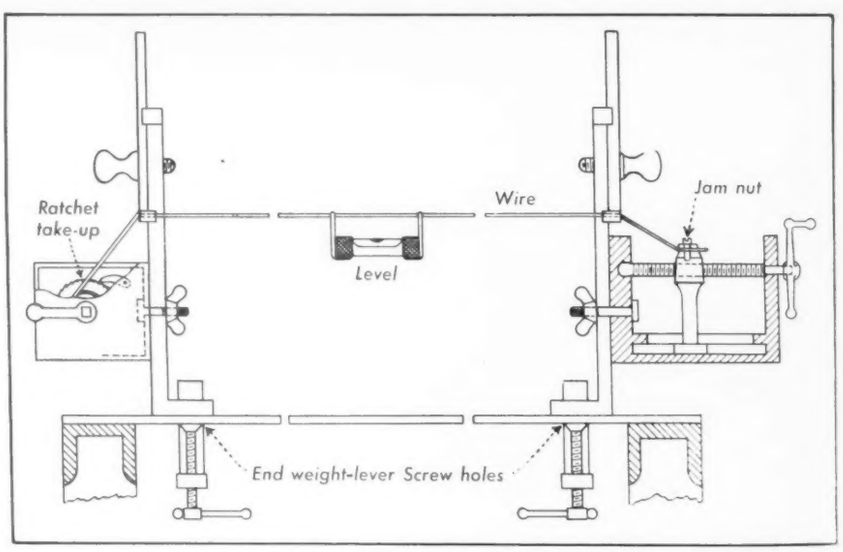
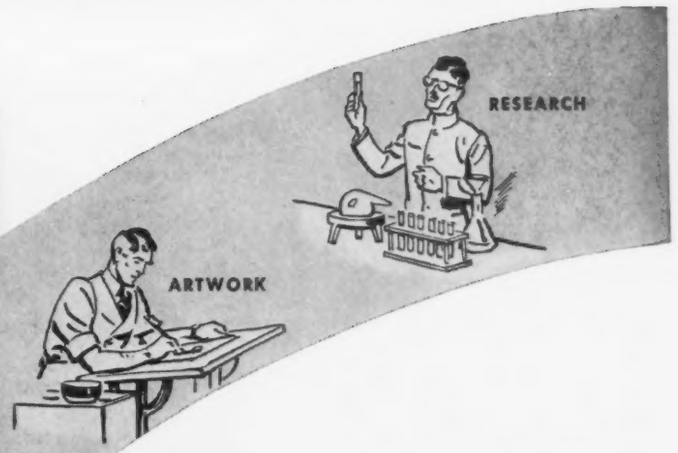


Fig. 1. (above) The straight edge is supported by forks at the tops of the stands. Fig. 2. (right) The steel wire supporting the bead level extends the length of the frame.



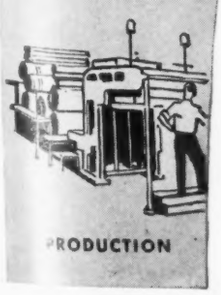
Experience or Expediency?

REGISTRATION

ENGRAVING

PHOTOGRAPHY

Dry Transfers
Prestomark Labels
Embossed Seals
Transfer Irons
Stamping Ink
Lithography for Box Wraps, Labels, Displays, Booklets, and Folders



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swinging bead level placed on it. Each samson of the frame is adjusted to the wire so that the stands present a level working bed for the rolls.

The method recommended for lining the samsons of a frame is to place the stands of the overhauling device at the ends of the frame, either at the roll stands or at the spindle rail; place a small pulley to act as a lining whorl in each stand; and stretch the steel wire taut, as before. Using a 6-in. rule, the distance from each samson to the wire is measured and adjusted as needed.

It is stated that these three adaptations make possible the use of the overhauling device on any textile machine.

Dyes & Chemicals — PRODUCTS & PROCESSES

Dispersing Agents

BETANOLS; Beacon Co., 97 Bickford St., Boston 30, Mass.

The Betanols, developed by the Beacon Co., 97 Bickford St., Boston 30, Mass., are high-molecular-weight esters expressly made to form dispersions which are stable in the presence of acids and mineral salts and over a wide pH range. They all possess water absorption powers, and their water dispersions or solutions are quite viscous. Either water-in-oil or oil-in-water emulsions can be made with them by the correct choice of ingredients, and they possess definite wetting powers.

Tables are available showing the form, color, melting point, and behavior of the various Betanols in various solvents and solutions. They are recommended wherever a dispersing, thickening, or wetting agent is needed which is to be used in the presence of acids, bases, or mineral salts.

Self-Scouring Lubricant

FYBROL 1115; L. Sonneborn Sons, Inc., 88 Lexington Ave., New York 16, N. Y.

A new self-scouring wool fiber lubricant with remarkable wetting and detergent properties, which is said to offer important advantages over conventional self-emulsifying oils, has been announced by the Textile Chemicals Div., L. Sonneborn Sons, Inc., New York. Outstanding features of the new product, known as Fybrol 1115 are its complete self-scourability and its inherent ability to form a stable opalescent solution (not an emulsion) which is soluble in hot water, oil, and petroleum solvents and does not break at room temperatures or when diluted with cold water.

Among other advantages claimed for Fybrol 1115, a sulphonated hydrocarbon whose characteristics are adaptable to all phases of wool processing, are the following: Uniform distribution of the oil on the fiber throughout the various processing steps; utilization of residual Fybrol 1115 for soapless fulling by the addition of a small amount of soda ash; ultimate removal of the oil by a simple water rinse. It remains unaffected in low concentrations of acid, alkali, and salt.

Powerful New Oxidant

HYDROGEN PEROXIDE 90% +; Buffalo Electro-Chemical Co., Inc., Buffalo, N. Y.

Hydrogen peroxide of high concentration has previously been a laboratory curiosity; but now it is being produced commercially by Buffalo Electro-Chemical Co., Inc., of Buffalo, N. Y. Development here of the material independently paralleled German production (for use in V- weapons).

German production was 80 to 85% concentration by weight, whereas the American product is 90% +. This hydrogen peroxide is a highly concentrated source of oxygen—one gallon will yield over 400 gal. of oxygen gas.

Mill Maintenance — TO KEEP 'EM RUNNING

Solvents Should Be Used with Caution

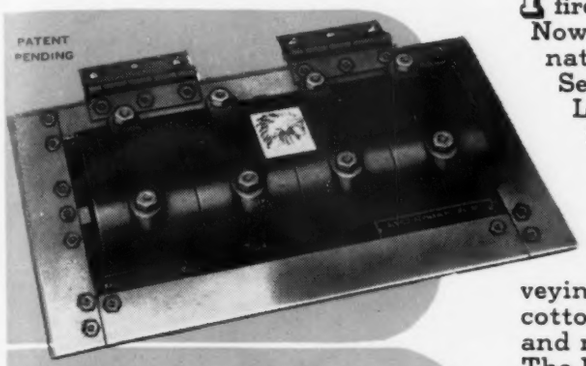
Mills using organic solvents for the purpose of cleaning machinery should take special safety precautions against fire and illness.

Solvent vapors can be injurious to the health of workers, and to avoid such injury, good ventilation should be regarded as an essential wherever organic solvents are used. The best procedure, according to a recent release by the Safety Research Institute, Inc., is to use properly designed degreasing equipment or a mechanically ventilated spray booth. If a mill which has no such equipment must do a considerable amount of machinery cleaning, it may find it advisable to install a special ventilator for handling the solvent vapors. This ventilator may consist of a motor-driven blower which draws the contaminated air from the breathing level and also from the floor level, where heavy vapors tend to collect. Small parts may be cleaned under a ventilated hood.

If the amount of cleaning done is not great, individual protection for the workers may be provided by means of gas masks. These should be of types approved by the Bureau of Mines for the specific conditions involved. Where the operator is provided with a mask, however, care should be taken that nearby workers are not exposed to solvent vapors through lack of general ventilation. It may be desirable to carry out cleaning operations after regular working hours, so that only the protected operators are present.

Skin troubles may be caused by frequent or prolonged contact with solvents. Where it is not possible to avoid skin contact with solvents, skin difficulties may be prevented by providing workers with protective clothing, creams, and good washing facilities.

HOW TO REMOVE TRAMP IRON AND STEEL FROM TEXTILES IN PROCESS



IRON and steel trash have caused hundreds of disastrous fires and much serious damage to textile machinery. Now in hundreds of plants this problem has been eliminated by ERIEZ Non-Electric Permanent Magnetic Separators.

Look over these successful ERIEZ magnet installations in some of the country's largest textile mills . . . your problem with tramp metals can be solved just as completely. ERIEZ Magnets are installed in suction lines, on discharge plates, ahead of picker feeding conveyors, over the spiked aprons of feeders, and in other textile processing machinery and conveying equipment to remove tramp iron and steel from cotton, wool, shoddy, jute, rayon, kapok, excelsior, feathers and moss, silk, etc.

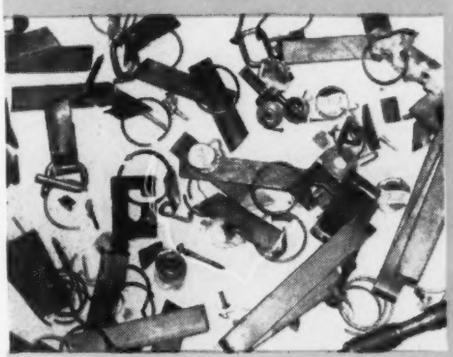
The ERIEZ magnet installation below is an inch above the spiked apron of a garnett feeder . . . an excellent point for ERIEZ Magnetic Protection because materials are well opened up for the powerful ERIEZ magnetic field to remove all bale ties, tie buckles, strapping, nails, screws, wire-stitching, travelers, etc. eliminating the hazard of fire, preventing damage to lickerin rolls and garnett wiring.

Many mill and factory Fire Prevention Bureaus and Insurance Companies have tested and approved ERIEZ Non-Electric Permanent Magnets and recommend their use to eliminate fires, machinery damage and loss of production time.

Pequot Mills, Mt. Vernon-Woodberry Mills, Dixie Cotton Mills, Hickory Spinners, Swift Mfg. Co., Goodyear Decatur Mills, and many more, are included in the list of ERIEZ MAGNET users.

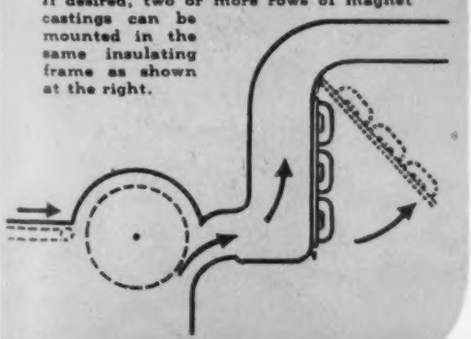
ERIEZ Non-Electric Magnetic Separators

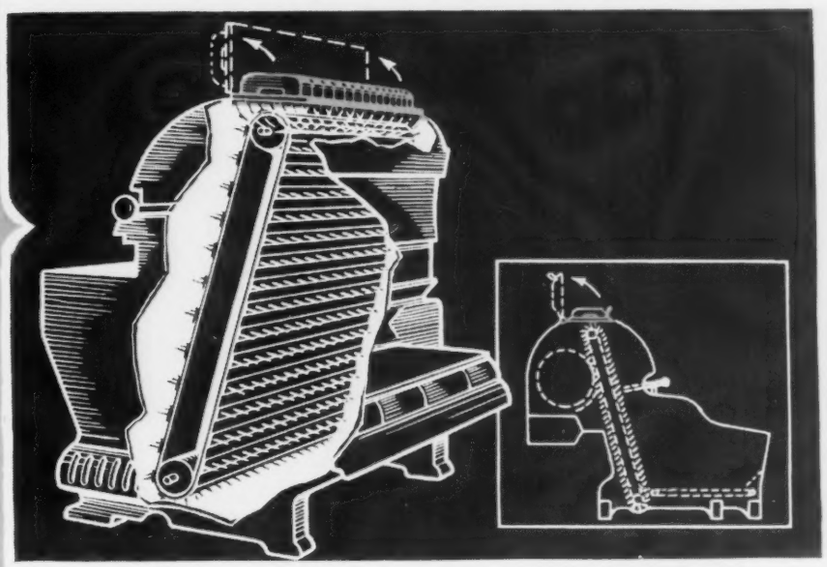
ERIEZ Non-Electric Permanent Magnetic Protection is now used efficiently in every type of textile mill, including mattress, bedding and upholstery plants, throughout the United States, Canada, Mexico, Central and South America.



One nationally known bedding manufacturer recently installed a 60" ERIEZ Magnet over the spiked apron of one of his feeders. At the end of a typical day's run, from one to two handfulls of wire stitching, tie buckles, bottle caps, etc. are removed from the magnet. Shown above, is another collection of tramp iron and steel removed from baled textiles in a very large mill.

If desired, two or more rows of magnet castings can be mounted in the same insulating frame as shown at the right.





For Your Copy of Bulletin 103 JAN. 46

Eriez Mfg. Co., 501 E. 12th St., Erie, Pa.

Your Name_____

Address_____

City_____ State_____

Eriez (Say EAR' EEZ)

ERIEZ MANUFACTURING COMPANY

501 East 12th St. Erie, Penna.

Kinks AND SHORT-CUTS

A $25 VICTORY BOND FOR YOUR IDEA

A $25 Victory Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operations. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any items submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

★ **VICTORY BOND PRIZE WINNER FOR JANUARY**

(November Contest)

Hand Reel An Aid In Sizing Sample Yarn

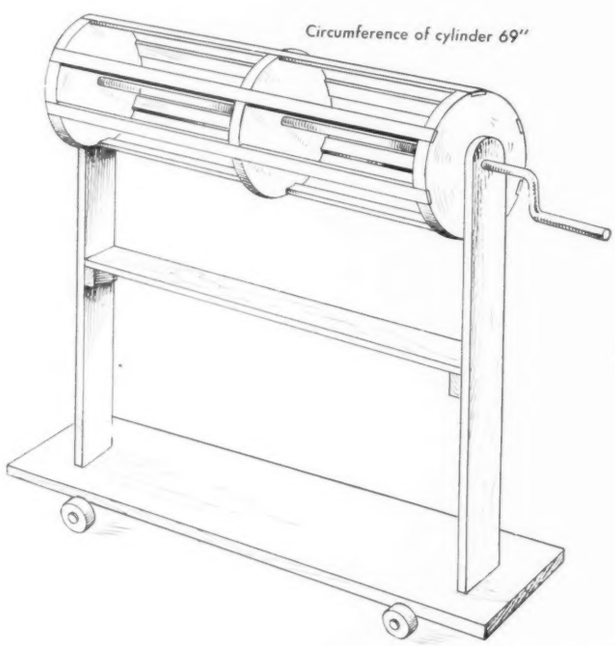
In the designing department of our mill, as in many other fancy- and novelty-goods mills, the sample makers produce tie-in samples. These samples are made by putting a warp of any color with the proper draw and chains into the loom, and breaking out ends and replacing them with the proper colors.

Naturally, the tie threads used in making these samples must be sized on the slasher and cut into proper lengths (in our mill the lengths are 69 in.). Formerly, this was a drawn-out and confining process for the yarn sizer. In order to get the yarn sized, he would place six or more bobbins of yarn of the same count and color on spindles protruding from a board to form a small creel behind the slasher. The yarn was then run through the slasher with the regular warp, separated, and wound into a ball.

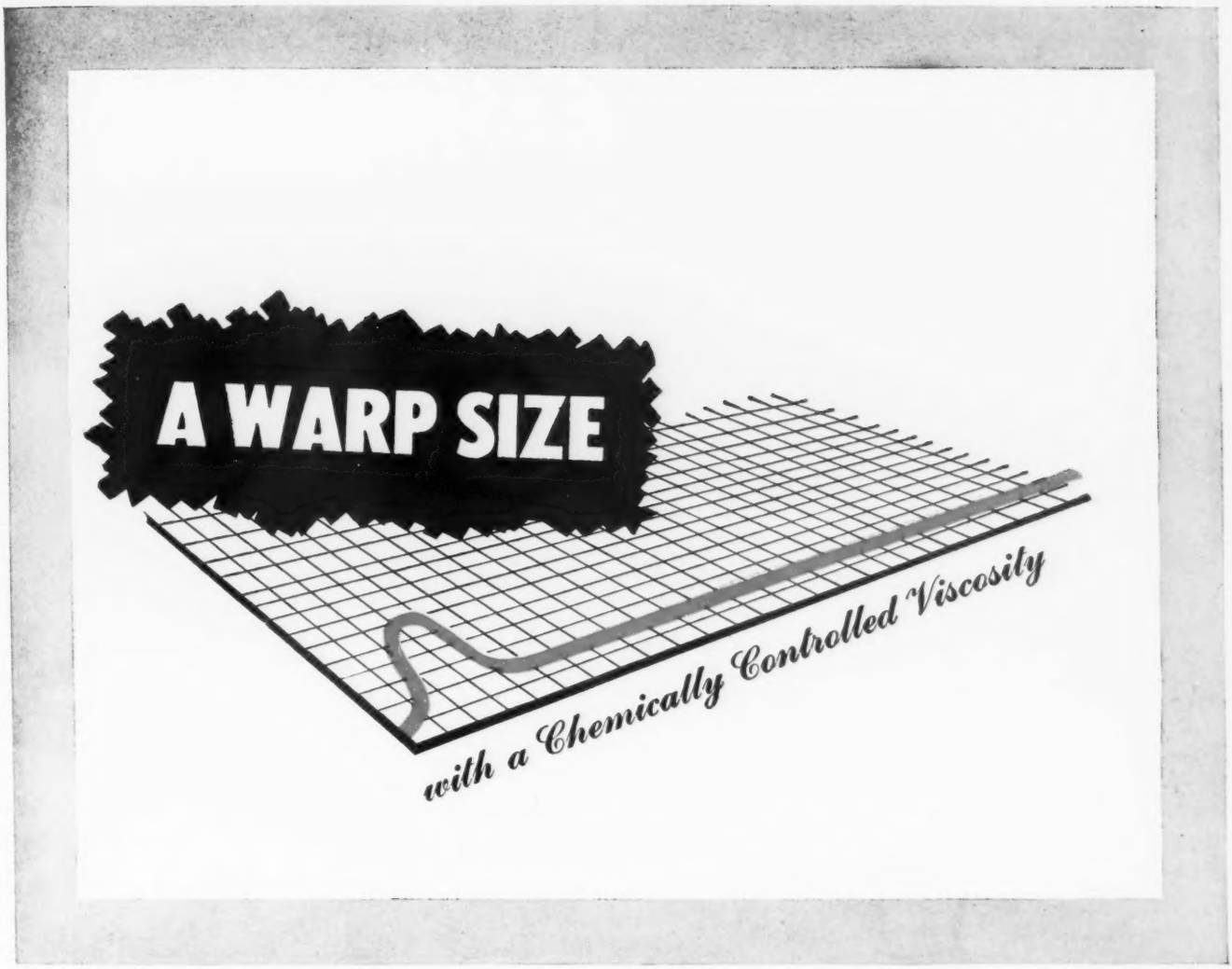
After a sufficient amount of yarn was wound, it still had to be cut into lengths. This was accomplished by winding the yarn from the ball around two nails placed 69 in. apart in the wall. The yarn was corded to keep it from tangling and was then cut at both nails. This produced a bundle of threads, each 69 in. long, ready to be used in making tie-in samples.

We improved upon this process by constructing a reel similar to the one shown in the drawing. The one we have is 33 in. from the floor to the center of the cylinder, and the cylinder is 30 in. long and 69 in. in

(Continued on page 142)



The reel should be made of smooth, shellacked wood; and the crank and middle shaft should be made from a steel rod or a length of pipe.



NALEX is a chemically refined warp sizing starch for fine cotton yarns and worsted yarns. Every batch will cook up to the same viscosity with only a 30 minute boil. And that viscosity will remain nearly constant in the size box and storage kettle — thereby insuring uniform sizing.

Viscosity largely controls the degree of warp size pick-up. Too low a viscosity means . . . insufficient size . . . inadequate film . . . excessive shedding, balling up and loom stoppage. Too high a viscosity means . . . excessive size . . . insufficient penetration . . . hard, brittle yarns lacking the flexibility needed for good weaving. Too varying a viscosity means . . . those soft spots so dreaded by all weaving superintendents.

— with NALEX, these operating difficulties are eliminated by a chemically controlled viscosity. The vagaries of Nature . . . caprices of weather and soil — *reflected in less fully processed warp sizes* — have been refined out of Nalex. As a result, it is uniform . . . batch to batch . . . hour to hour. Yarns sized with Nalex are strong, smooth and pliable . . . shed less . . . and produce grey cloth that has a pleasing appearance and hand.

NALEX is readily available at savings from $500 to $1,000 a carload over ordinary warp sizes. It uses 50% less softener for regular sizing; none for light sizing . . . needs no enzymes or chemicals to adjust its accurately controlled viscosity. Ask for a trial demonstration. A National technician can run off a few beams without upsetting production.

National STARCH PRODUCTS

National also produces: FIBERJEL AC, a warp size for both filament and spun Acetate and Viscose Rayon yarns; HOOSIER Pearl Cornstarch; FLOJEL, uniform, thin boiling corn starches in all standard fluidities; FIBERTEX for textile finishing; and KOVAT, a cold water swelling gum for vat and discharge printing.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Chicago, Indianapolis, San Francisco, and other principal cities. In Canada: Meredith, Simmons & Co., Ltd.; Toronto and Montreal.

STARCHES — AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

KINKS & SHORT CUTS

(Continued from page 140)

circumference, since 69 in. is the length we want our tie-threads.

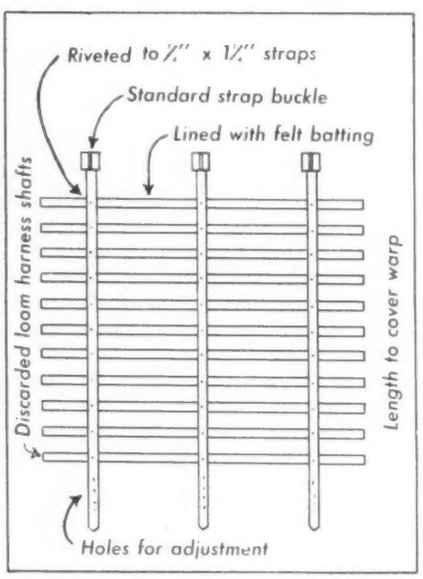
In using the reel for our sample yarn, we place six bobbins each of as many as four different colors behind the slasher, keeping the colors grouped. When the sample yarn gets to the front of the slasher, we separate it from the regular warp on the slasher and put the six ends of each color in separate dents about 6 in. apart. Then we tie the yarn to the reel and wind it onto the cylinder of the reel by turning the hand crank as the yarn comes off the slasher. In this manner, four times as much sample yarn can be sized by one man in the same length of time as by the first method.

When as much yarn as desired has been wound onto the cylinder and cut off, the 69-in. lengths are ready for use. *(K-424) M. L. Morris, Columbus, Ga.*

Rayon Warp Covers Made with Harness Shafts

A company by which I was employed had two mills located 12 miles apart, and it was necessary to haul rayon warps from one plant to the other. Frequently, expensive damage to the warps occurred; and to protect the warps during loading, hauling, and unloading, we made covers for them.

Discarded loom harness shafts were fastened to three leather straps, as shown in the sketch. The shafts should be 4 or 5 in. apart, and the straps should be long enough to reach around the warp and buckle. *(K-422) Richard Dilworth, Pawtucket, R. I.*

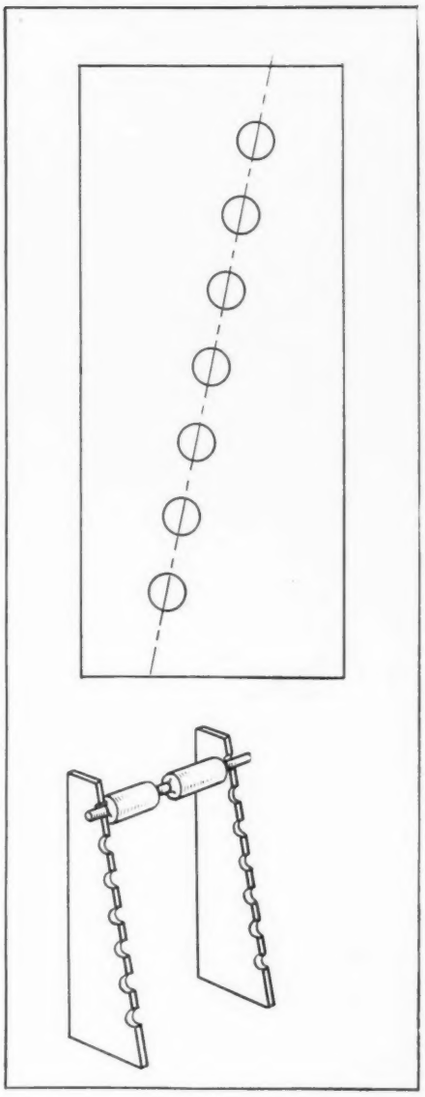

Riveted to ⅞" x 1¼" straps
Standard strap buckle
Lined with felt batting
Discarded loom harness shafts
Length to cover warp
Holes for adjustment

The harness shafts should be lined with felt batting to prevent their damaging the warps.

Extra Spinning Rolls Should Be Kept in Rack

Ends broken back as a result of damaged rolls cause an important loss of production, particularly in mills spinning coarse numbers. To make it convenient for spinners to replace the rolls, it is common practice to keep a supply of good rolls available.

A small rack, placed at the end of the frame, is much more desirable for holding the extra rolls than allowing them to be placed in the creel or on top of the frame. When a good roll is taken out of the rack, the spinner should place the damaged roll in its place. When the rack is filled with bad rolls, the section man should remove them and take them to the roller room to be buffed. *(K-430)*

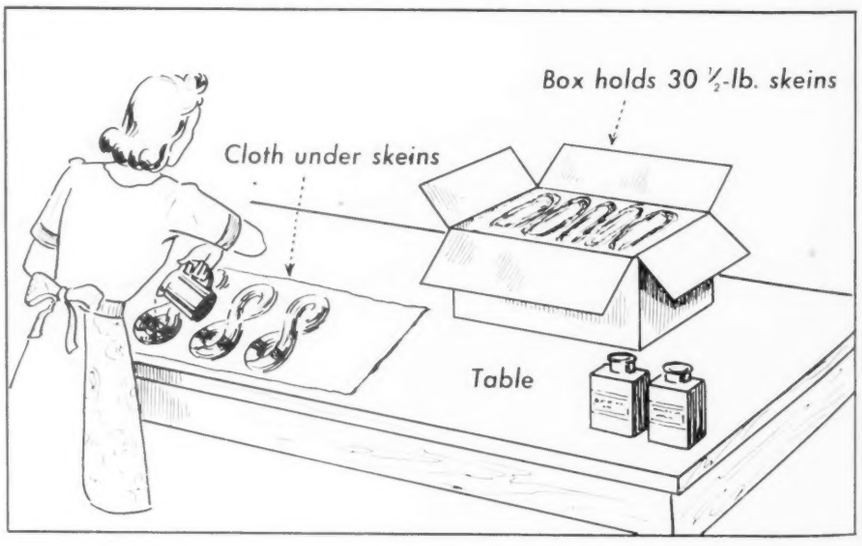


Bore holes about 2 in. apart in a piece of 1-in. board and saw down through the holes to form the sides of the roller rack.

Quick Tinting Method Depends on Laying-Up Skeins

Often it is desirable to tint skeins for identification purposes. To do this, we used to spray them with a tint solution while they were hanging on poles that later were put into our dryers. This seemed expensive, since it not only required mounting the skeins on poles but also required running our dryer.

To solve both these problems, we



Skein must be placed so that the tint will contact inside and outside yarn

Tough Going! But Dayton DeLuxe Loop Pickers are Engineered to do this job twice as Long as other Pickers!

It's a terrific impact . . . the impact of picker against shuttle . . . a blow that is repeated as many as 85 times a minute. Such impacts of the highest speed looms, however, are easily taken in stride by Dayton De Luxe Loop Pickers.

Reason for their exceptional stamina is their special construction. The face-block has precisely the proper cushion, resilience, and durability; is anchored in, and vulcanized to stay. It can't buckle or distort. And the face is flared, and shaped to guide the shuttle into the body of the picker.

The loop holds, too. Its tapered hole with rounded corners fits tightly, and has no expansion; so Dayton's don't "work up". They maintain throughout many months of service, the correct position for perfect shuttle throw.

Hundreds of users have found that they can save up to 50% on picker costs by adopting Dayton De Luxe Loop Pickers. You, too, can benefit by using Daytons. Write today for all the facts on this specially engineered picker.

THE DAYTON RUBBER MANUFACTURING COMPANY

Factory—Waynesville, N. C.

MAIN OFFICE: WOODSIDE BLDG., GREENVILLE, S. C.

IMPORTANT REASONS WHY YOU SHOULD STANDARDIZE WITH DAYTON DELUXE LOOP PICKERS

1. Greater strength for double life.

2. Resilient construction for proper cushion.

3. Flared bottom for protection when applied.

4. Rounded front corners to reduce roughness.

5. Perfect fit for easy application.

6. Precision mold to retain shape and fit stick.

Dayton Rubber

FAMOUS DAYCO SYNTHETIC RUBBER PRODUCTS SINCE 1934

KINKS & SHORT CUTS

(Continued from page 142)

now tint our skeins as shown in the sketch. We use a quick-drying solvent to carry the tint, and it is merely poured on the skeins. The only trick involved is laying the skeins in such a way that one end forms a loop so that the tint reaches the inside as well as the outside of the yarn skein. This method ensures the tint being seen on the outside of the package after the skein is unwound.

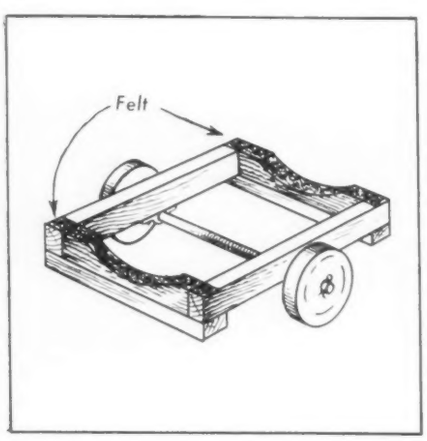
As a note of warning: be sure the tint you use is fugitive and that the solvent will not cause any difficulties later.

We find this method—and even our older one of spraying the skeins—far superior to immersing skeins, which we used to do to tint them uniformly; and the method of identification is just as satisfactory. It is possible to tint both ends of the skeins, using a different color on each end, if this should be desirable. Of course, that would take more time and cost more money. *(K-428)*

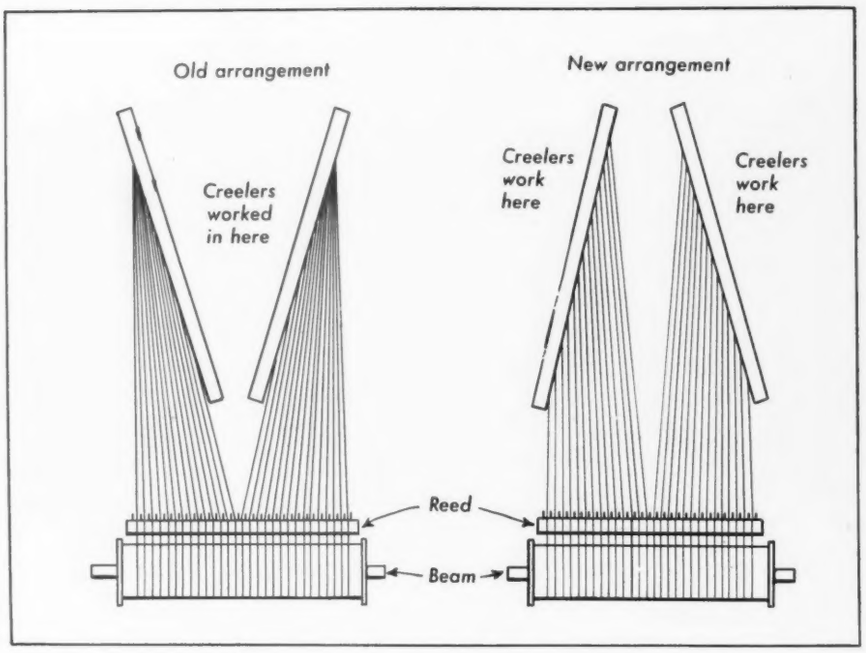
Strips of Felt Protect Warps

The two-wheel warp trucks we use for transferring rayon warps from the storage racks to the looms often caused a slight displacement of the yarn, resulting in small humps and depressions on the warp. Sometimes these truck marks were so bad that they caused smashes on the loom.

To avoid this, we glued strips of felt on the inside of the trucks at each point that the warp touched. Much improvement has been noted in the condition of the warps. *(K-420)*



Felt should form cushion for warp.



Four creelers have plenty of working space with this inside-out arrangement.

Turning Creels Inside Out Cuts Down Warping Costs

Taking a tip from a manufacturer of warping equipment, we have turned our old low-speed V creels "inside out" and have stepped up the efficiency of our four spool warpers from 36% to over 50% with no additional operators.

We reasoned that in running our warpers, more time was spent creeling than putting up occasional ends that came down. Actually, we use one warper tender to four creelers to keep the machines running (all on hour work).

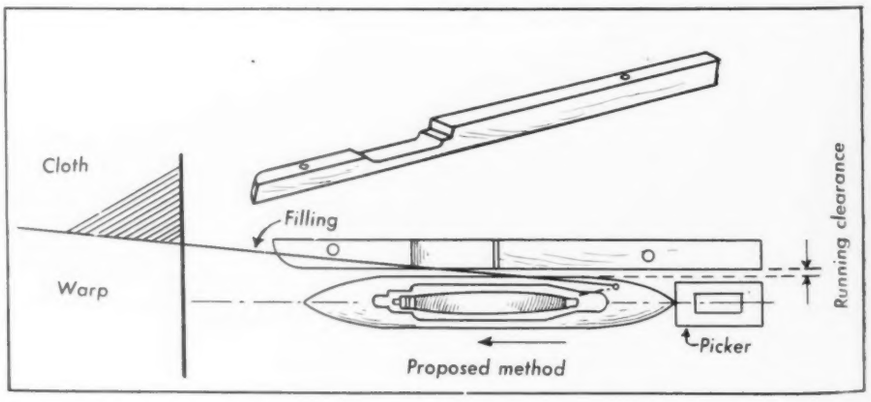
Under former conditions, the four creelers all would often try to work inside the V of the creel and would get in each other's way. Even two could not work efficiently inside the creel. Now, with our creels "inside out," four creelers can work on one warper, if they wish, without getting into each other's way.

The old and new worker set-ups can be seen in the accompanying diagrammatic sketch. This arrangement is not recommended when warping yarn that breaks repeatedly, or for warping if packages run out excessively. We rarely have packages to run out and are able to keep our breaks down to less than 12 (average 6) per creel.

Incidentally, this improvement solved one of our biggest problems: running the third shift. Now we don't. *(K-429)*

Modified Box Front Reduces Filling Breaks

Frequent filling breakage in weaving results from the shuttle, when moving into the shuttle box, binding the filling



The cut-down box front permits the shuttle to be stopped and its movement reversed without breaking the filling.

REVOLUTIONIZING WOOL PROCESSING IN LEADING MILLS EVERYWHERE!

. . . Fybrol 1115 . . . .

THE *Self-Scouring* WOOL FIBRE LUBRICANT
WITH REMARKABLE WETTING AND DETERGENT PROPERTIES

- ☆ NON-GUMMING
- ☆ SOLUBLE IN HOT WATER
- ☆ UNIFORM PENETRATION OF FIBRE
- ☆ INCREASES TENSILE STRENGTH OF YARN
- ☆ SELF-SCOURING ☆ SOAPLESS FULLING

IMPORTANT
FREE TECHNICAL ASSISTANCE
Sonneborn offers you the services of its technical experts who will work with you in your mill, at no cost or obligation, to help establish the proper method of applying Fybrol 1115 for best results.

Here's the Complete Story. Send for Your Copy of This New Technical Bulletin. Write Dept. W1

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Plant and Laboratories:
Nutley, New Jersey

Refineries:
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WORSTED MILLS, ATTENTION!

Write or wire today for details on Fybrol 1115L, the remarkable new *Self-Scouring* Worsted Processing Oil. Same exclusive features and advantages as the wool oil announced above.

Woolen and Worsted Oils • Petroleum Sulfonate Bases • Detergents and Dyeing Oils • Penetrants • Delustering Specialties • Warp Dressings • Finishing Sizes and Softeners • Water Repellents • Sulfonated Oils • Wetting and Rewetting Agents

KINKS & SHORT CUTS

(Continued from page 144)

against the side of the box. The writer has been able to reduce materially the number of breaks resulting from this cause. By cutting down the box front from the feeler slot to the end, so that the height of the box is reduced approximately one-half, the filling is allowed to lie across the front of the box instead of being bound against it.

When the shuttle moves into or out of the box on the pick, the filling is free and follows the path of the shuttle without breaking. *(K-397) Nelson C. Evans, Slatington, Pa.*

Wiping Oil on Machines Helps Remove Nylon Size

Anyone using polyvinyl-alcohol size on nylon yarn knows what a problem it is to keep sizing machines clean. The size splashes off the nylon after it leaves the sizing rolls and a mist seems to settle everywhere. Formerly, we spent many hours using hot water and scraping to keep the machines clean.

Finally, we found that if we wiped regular machine oil on the machines after they had been cleaned, the next deposit of PVA could be peeled off easily by hand. This simple kink has saved us many hours of cleaning and has saved the finish on our machines from being scratched as the size is scraped off. *(K-427)*

Loom Pattern Chains Stored in Special Bin

A bin for storing pattern and box chains when not in use can be of considerable help to loom fixers, pattern-chain builders, etc., in mills where a great deal of style changing is done. I have found a bin similar to the one shown in the sketch to be satisfactory.

The bin we use is designed to take care of the chains for 100 looms. It is 6½ ft. high, 12¾ ft. long, 2 ft. deep at the top, and 3 ft. deep at the bottom. The frame is made of 2x4-in. lumber, and the slanting shelves are made of 1-in. boards. The cells for different chain constructions are made by fastening partitions of ¾-in. plywood between the shelves. *(K-421)*

Maximum Temperature Easily Found by Finisher

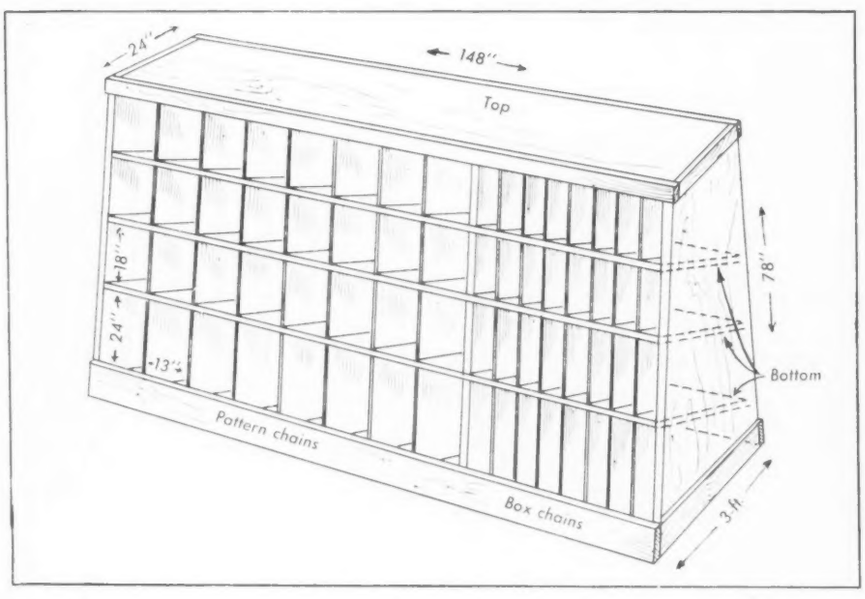
There are many times when a finisher needs to know the temperature of a solution, of air in a dryer, or of the surface of cans or cloth. Sometimes a thermometer for determining such temperatures is provided as a part of the equipment being used, but it needs checking to be sure that it is indicating the actual temperature.

For finding temperatures or checking temperatures, many of my fellow finishers use a simple thermometer—mercury filled, usually—but between the time the temperature is taken and the thermometer is read, a drop of several degrees is likely to occur if the thermometer must be removed in order to be read, as it often must be.

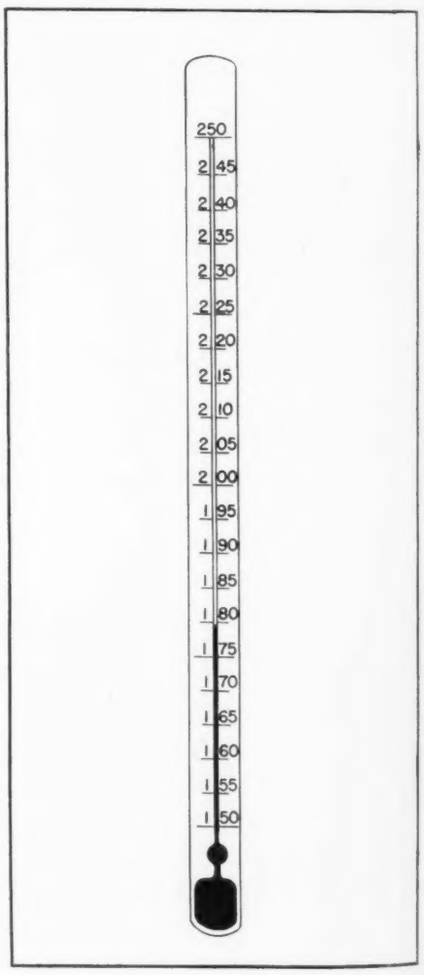
For such jobs, I use a special thermometer which holds the maximum temperature, just as does the clinical thermometer which a doctor uses to take your temperature. In fact, I carry such a thermometer with me at all times, and it is a simple matter to check on temperatures as I go through our finishing plant. One advantage is that when I take a temperature and later want to show it to the operator in charge, or his immediate supervisor, there is no question that I read the temperature wrong. I can show exactly the temperature I found.

With the increased use of time-and-temperature methods of finishing, more and more checking must be done. We cannot afford to have great yardages of cloth damaged or improperly finished just because correct temperatures were not maintained.

A thermometer such as I use can be obtained from most supply houses dealing in laboratory equipment. *(K-419)*

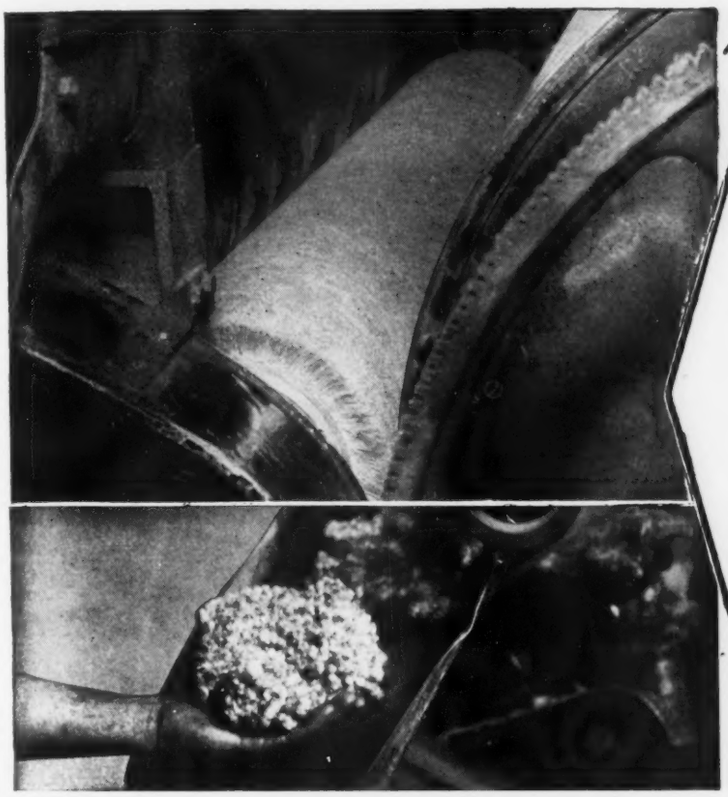


The cells should be numbered to identify chains for particular weaves.



Enlarged portion near bottom of tube holds mercury in column at maximum temperature reading.

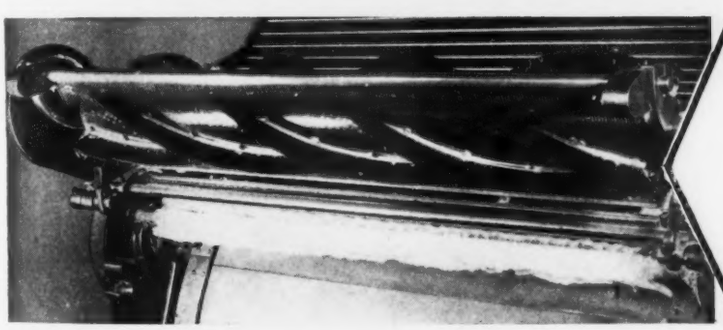
"FULLERGRIP" is the Fuller Brush Company's patented method of gripping brush materials in a rust-resisting metal backing. The machine-controlled placing of materials in the metal backing results in a uniformly solid brush face, which can be fastened onto metal cores, or arbors. The density of the brush and the durability of the holding method means long life, better performance and serviceability.



All types of Brushes, Machine or Hand, for Textile and Finishing Mills.

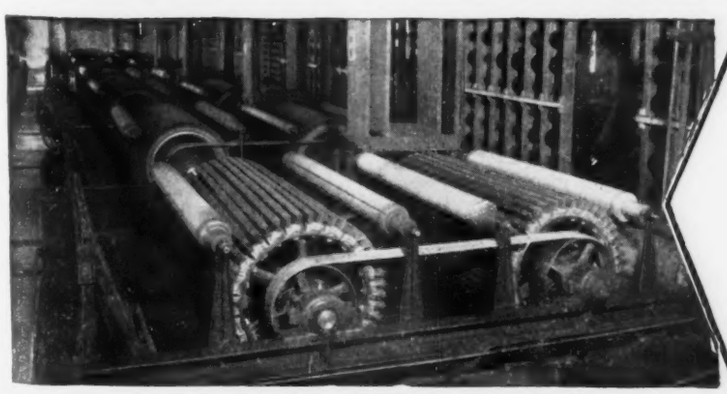
WORSTED-CARD BRUSHES

FULLERGRIPT Worsted Card Brushes, because of the densely packed brush materials, push the wool—*all* of the wool—down into the pins of the Morel clothing, leaving the burrs on top of the pins, free of fiber, ready for easy removal. (See cut.) Fullergript cylindrical brushes are proving helpful in three ways on worsted cards: As *feed roll brushes* to start the wool properly in the teeth of the first lickering; as *Morel brushes* to disentangle the burrs from the wool; as *transfer brushes* to carry the wool to the Morel roll and disentangle the burrs at the same time.



COTTON-FLAT CARD-BRUSHES

RIGID, metal-backed brush strips, pre-formed to the correct degree of spiral, can be easily attached to your present wood cores. The density of the brush with no gaps, prevents the accumulation of lint or lumps on your cards, and the stripper is cleaned more thoroughly. This means better carding.



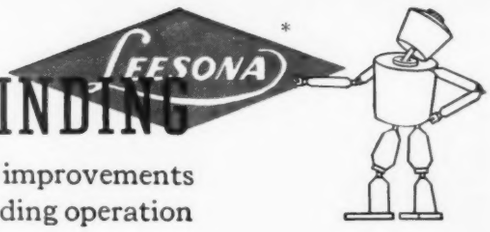
THREAD DRESSERS

DISCARD wood lags with their variation in weight, warping, splitting, and falling tufts. Use Fullergript for better ventilation and increased production. Their are no gaps or tufts in Fullergript to allow threads to ride on the core. These brush strips are set in pairs equally spaced around the periphery of the spiders, and are easy to install. Their production life is longer because of the dense, massed bristle filling.

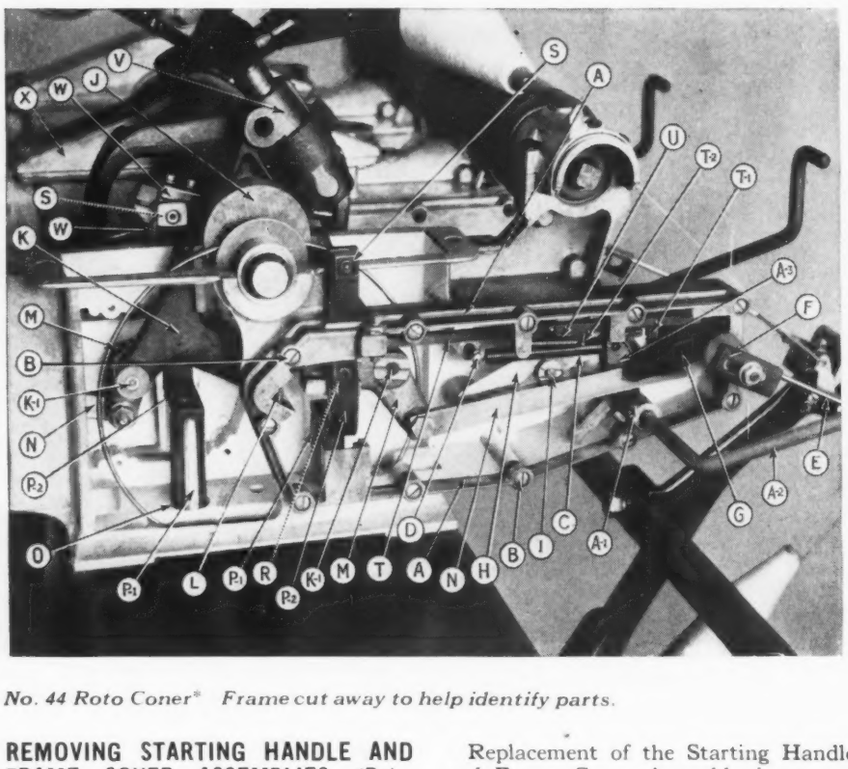
THE FULLER BRUSH COMPANY
INDUSTRIAL DIVISION, DEPT. 8C, 3594 MAIN ST., HARTFORD 2, CONN.

THIS IS NO. 55 OF A SERIES ON

GETTING THE MOST FROM WINDING



Information about winding designed to show improvements in winding equipment and new ideas in the winding operation



A. Starting Handle and Frame Cover Assembly; B. Frame Cover Screws; C. Starting Handle Lever Spring; D. Starting Handle Lever Spring Pin; E. Breakage Lever; F. Breakage Lever Clamps; G. Breakage Lever Pawl; H. Breakage Lever Pawl Trip Lever; I. Clip; J. Cam; K. Cam Yoke; L. Cam Yoke Shaft; M. Cam Yoke Shaft Lever; N. Cam Yoke Shaft Lever Link; O. Dashpot; P. Dashpot Plunger and Link; R. Lower Dashpot Link Stud Block; S. Upper Dashpot Link Stud Block;* T. Dashpot Link Lock; U. Dashpot Link Lock Spring; V. Spindle Holder Bearing; W. Spindle Holder Bearing Plate; X. Frame Cap.*

**Identical parts.*

No. 44 Roto Coner Frame cut away to help identify parts.*

REMOVING STARTING HANDLE AND FRAME COVER ASSEMBLIES (Roto-Coner*)

(1) Remove Frame Cover Screws B (SC-1702CA). There are 11 such screws in each cover.

(2) Loosen Starting Handle Collar A-1 and move away from cover. Push Starting Handle A-2 into the Frame about one inch, so that the cover can be moved away from the Frame and tipped as required in the next instruction.

(3) Holding Starting Handle A-2 in right hand and the cover in the left hand, gently free the assembly and tip it clockwise so that the Lever A-3 welded to the inner part of the Handle will clear the Cam Yoke Shaft Lever Link N. Since Link Lock T and Link Lock Spring U may fall out, watch carefully to avoid losing them.

(4) Remove Starting Handle Lever Spring C from the Pin D; lower the Starting Handle A-2, raise Cam Yoke Shaft Lever Link N and remove cover.

Replacement of the Starting Handle and Frame Cover Assembly is accomplished as follows:

(1) Reshellac the Gasket (44-5), if loose, in order to hold it in place during installation only.

(2) Apply Clips (44-327 and 44-328), as shown in Fig. 3 on page 44-8 of the Roto-Coner* Parts Catalog, to hold the Dashpot Link Lock T in correct position. Make sure that the side of the Lock T having both the square block T-1 and the round pin T-2 is at the bottom. Hook the two ends of the Link Lock Spring U over the round pin T-2 and a pin (not seen in the photograph) that is driven into the cover.

(3) Loosen Starting Handle Collar A-1 and push the Starting Handle A-2 inward.

(4) Pass a thin flexible wire around the outer end of the Breakage Lever Pawl Trip Lever H, and bend it around the bottom edge of the Frame to hold down the Lever.

(5) Raise Cam Yoke Shaft Lever Link N as high as it will go. Hook the Starting Handle Lever Spring C into hole in the Lever A-3 on Starting Handle and over the Starting Handle Lever Pin D.

(6) To lift Breakage Lever Pawl G, press down Breakage Lever E or Breakage Lever Clamps F with little finger of right hand.

(7) Tip the cover slightly clockwise so that the Lever A-3 will pass up under the Link N.

(8) Return the cover to vertical and pass the bearing at the inner end of the cover over the Cam Yoke Shaft L.

(9) Press the cover loosely into position, making sure that Dashpot Link P-2 fits squarely into the slot in the cover.

(10) Remove Clips (44-327 and 328) and withdraw wire from Trip Lever H.

(11) Try Starting Handle A-2 to make sure it works, then replace Frame Cover Screws B (SC-1702CA).

(12) Pull out Starting Handle A-2 snugly and tighten Collar A-1.

*Reg. U. S. Pat. Off. January 1946

See our Catalog in TEXTILE WORLD YEARBOOK 23.5.13

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UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

LETTERS to Pete & Bill, discussing material in this department, are paid for when published. Suggestions for the Pete & Bill dialogue will also be paid for if used. If these pages interest you, contribute something to interest others. Address PETE & BILL, Textile World, 330 West 42nd St., New York 18, N. Y.

Pete & Bill

New Slant on Favoritism

How can a supervisor best meet petty jealousies between workers who stayed through the war period and those lately returned after benefiting from war-plant wages?

HEY, BILL, TWO OF YOUR WORKERS ARE SNARLING AT EACH OTHER OUT THERE. BETTER TELL THEM TO SETTLE THEIR DIFFERENCES AFTER HOURS.
'FRAID I STARTED THAT, PETE, BY GIVING THAT FELLER FRESH BACK FROM A WAR-PLANT THE BATTERY OF NEW MACHINES TO RUN. IT'S NOT TOO SERIOUS.
1
YOU MEAN YOU GAVE PREFERENCE TO ONE OF THOSE SNAKES WHO DESERTED US FOR WAR-PLANT WAGES!
WELL, THE OLD GUY WHO STUCK WITH US THROUGH THE WAR YEARS IS NOT SO HOT. THE OTHER FELLOW IS A COMER.
2
BUT, BILL, YOU'VE GOT TO ENCOURAGE LOYALTY AND RECOGNIZE SENIORITY. LOOKS TO ME LIKE YOU'VE MADE A BAD BLUNDER.
IT WILL BLOW OVER, PETE. ITS ONLY A MATTER OF TEMPERAMENT. I MIGHT DO SOMETHING FOR THE OLD FELLOW TOMORROW.
3
BUT THE DAMAGE IS DONE, BILL.. YOU'VE SHOWN THAT YOU'VE FORGOTTEN THE WORKERS WHO SAW US THROUGH. THAT HURTS MORALE, DOESN'T IT JOE?
YOU'VE GOT TO AVOID APPEARANCE OF FAVORITISM, BOYS, AND YET GET THE BEST WORK DONE. HOW DO YOU READERS HANDLE CHOICES LIKE THAT?
4

Letters From Readers

Visiting Only by Permission

"The Wandering Employee"
(Pete & Bill, Oct. 1945)

Dear Pete & Bill:

The common practice of employees circulating around the mill during working hours should be discouraged. Only in cases of urgent necessity should permission be granted to an employee to visit some one in another department. When such permission is granted, it should be ruled that the visiting employee request permission of the overseer in charge of the department where the visit is to be made. It should be strictly understood that visits are to be of short duration.

Visiting distracts the employee's attention from his work. Definite rules, strictly enforced are fair to all and eliminate favoritism. (PB102)

Training Helps Veteran Readjustment

"Training for a Mill's Veterans"
(Pete & Bill, Nov. 1945)

Dear Pete & Bill:

There is no question that a retraining course in mill procedure is necessary for the readjustment of veterans. War has made many changes not only in a soldier's train of thought but also in management's way of thinking.

It hardly seems possible that the returning veteran will feel offended at the thought of being given a so-called "apprentice training" after being an experienced hand prior to his entry into the armed forces. No doubt, there would be some who would resent this policy, but this type would be in the minority.

An ex-serviceman could make his own adjustments but chances are that a "helping hand" would be of great benefit to him. Management's job is to consider this fact and to reward its victorious G.I.'s with its utmost assistance. The fact remains that "they did their job"

and so management must "do its job" by providing a well-supervised training program for the veterans. (PB101)

No Promiscuous Wandering

"The Wandering Employee"
(Pete & Bill, Oct. 1945)

Dear Pete & Bill:

There are two factors to take into consideration with the problem in the Pete & Bill dialogue in the October issue concerning wandering employees. One is cost and the other human relations. Both factors are of the utmost importance. Everyone knows that cost figures determine whether or not you stay in business, and human relations is important because a dissatisfied employee can cause considerable waste.

Promiscuous wandering of employees on the slightest whim or fancy should be discouraged. The department head of the visiting employee should be the one to decide whether or not it is necessary to visit a department to talk with an employee. If the visit cannot be postponed until after working hours then the person with whom the employee is going to visit should be relieved of his duties temporarily so that production will not suffer. (PB103)

No Gifts From the Help

"The Annual Christmas Problem"
(Pete & Bill, Dec. 1945)

Dear Pete & Bill:

I agree with the third party that the heads of departments in plants should not be allowed by the management to accept gifts from the people under his control. I think it has a tendency to put the foreman under an obligation to his help, as they might expect favors or leniency and overlooking of their errors or shortcomings. People working in a plant are expected to do the job assigned to them; they sell their time to the management, and this applies to the overseer or foreman also. (PB104)

Foremen Should Continue Their Training

"Training for the Older Help"
(Pete & Bill, Aug. 1945)

Dear Pete & Bill:

In my judgment the foreman, no matter how experienced he may be in his chosen profession, should stand frequent aptitude tests, and take schooling, too, at intervals, each year.

Tests should be given to ascertain whether the foreman is as alert and competent as he should be to reach top production in the plant. (PB105)

Books of Interest

Luminescent Dyestuffs and Substances

FLUOROCHEMISTRY, by Jack DeMent; Chemical Publishing Co., Inc., 26 Court St., Brooklyn 2, N. Y.; 763 pages; $14.50.

Textile chemists that handle or that are interested in fluorescent and luminescent chemicals will find this book an excellent study and reference. Basic concepts of fluorochemistry, its phenomena, and applications are described. Also covered are the preparations of the various luminescent organic substances, dyestuffs and coloring matters, ultraviolet-emitting inorganic and organic substances, and qualitative and quantitative tests for their identification. Useful tables and a bibliography add to the value of the book. Very little material is offered concerning the dyeing of textile fabrics with these dyes, as the book is devoted almost entirely to the dyestuffs themselves and materials of fluorescent nature.

Uxbridge— in Peace and War

THE UXBRIDGE MILLS, Uxbridge Worsted Co., Uxbridge, Mass.; 72 pages; limited circulation.

This book, a tribute to the employees of the thirteen mills of the Uxbridge Worsted Co. in peace and war, is one of the outstanding books to be published by a company in which it depicts the activities of its employees at work, at play, and at home.

Details of Motor Control

CONTROL OF ELECTRIC MOTORS, by P. B. Harwood; John Wiley & Sons, 440 Fourth Ave., New York; 471 pages; $5.00.

The plant engineer will find this book helpful whenever his work requires that he check over installation plans for new motor equipment and when he has a problem in connection with motor control. Such items as characteristics and control of electric motors, direct-current and alternating-current contactors and relays, pilot devices and accessories, accelerating methods, wiring diagrams, construction of control apparatus, variable-voltage controllers, and electronic motor control are covered.

Analysis of World Tariffs for Wool Goods

TRADE BARRIERS; The Association of Wholesale Woolen Merchants Limited, Empire House, St. Martins-le-Grand, London, E.C.1, England; 33 pages.

Standardization of tariff schedules for the countries of the world is the key-note of this booklet. Of interest to all engaged in international trade of wool goods and to those who intend to enter this field, the booklet points out that a mass of restrictions and taxes have been piled on top of tariffs and that these should be replaced by uniform tariffs and specifications. In the section on statistical studies the taxes, restrictions, and tariffs in 45 countries are outlined.

Recommendations are offered for a five-point program for establishing uniform regulations and to correct some of the present high costs brought about by present tariffs.

Other Publications

PLASTICS—SCIENTIFIC AND TECHNOLOGICAL, by H. Ronald Fleck; Chemical Publishing Co., 26 Court St., Brooklyn 2, N. Y.; 305 pages; $6.50.

BULLETIN OF THE NATIONAL ASSOCIATION OF WOOL MANUFACTURERS, Vol. LXXIV; National Association of Wool Manufacturers, 80 Federal St., Boston, Mass.; 655 pages; $10.00.

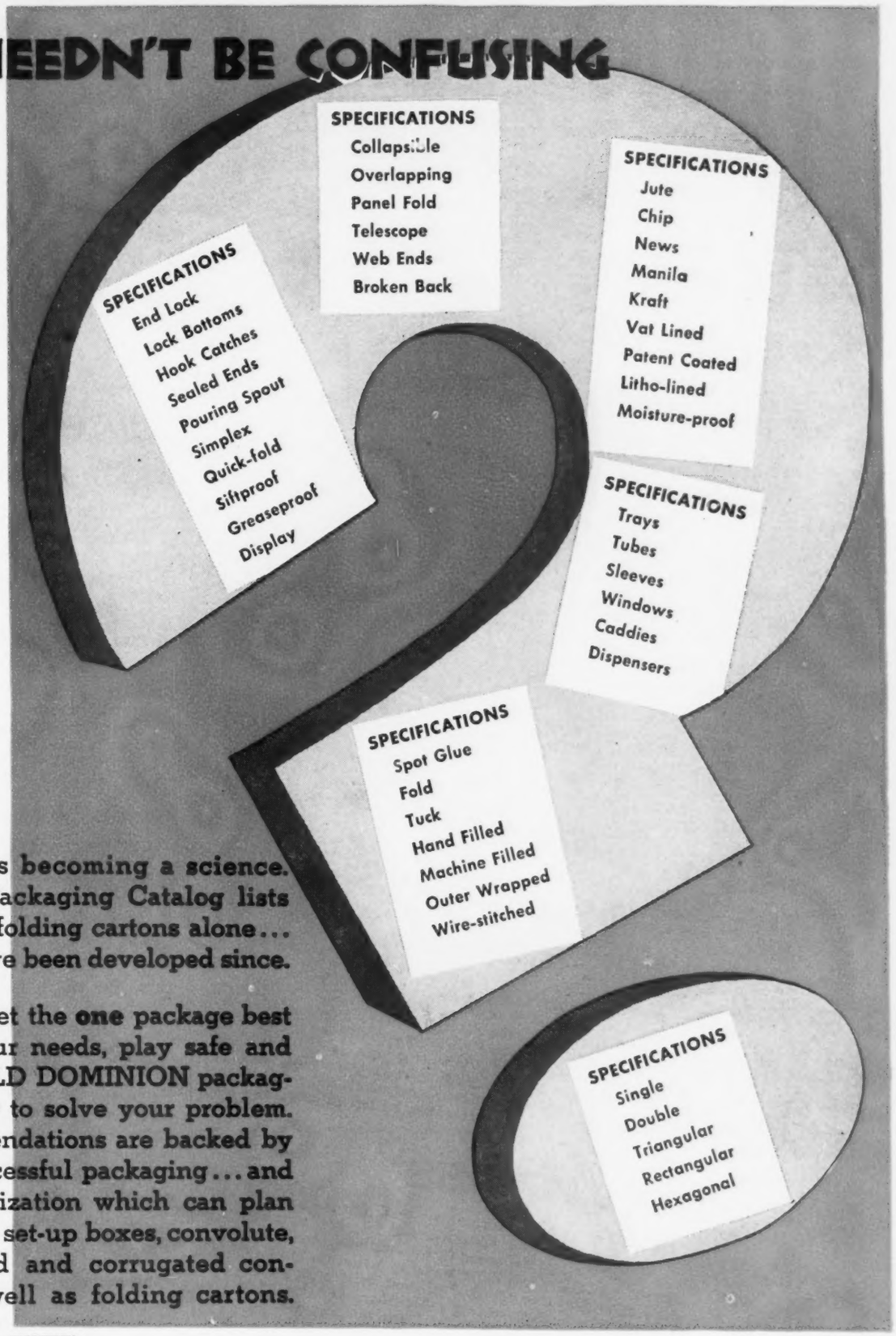
A.S.T.M. STANDARDS ON SOAPS AND OTHER DETERGENTS (With related information); American Society for Testing Materials, 260 S. Broad St., Philadelphia 2; 183 pages; $1.75.

STRAIGHT TALK FOR DISABLED VETERANS, by Edna Yost; Public Affairs Committee, 30 Rockefeller Plaza, New York 20; 31 pages; 10¢.

EXTENT OF COLLECTIVE BARGAINING AND UNION STATUS, January, 1945; Bulletin No. 829; U. S. Government Printing Office, Washington 25, D. C.; 9 pages; 5¢.

GUARANTEED-EMPLOYMENT AND ANNUAL WAGE PROVISIONS IN UNION AGREEMENTS, Bulletin No. 828; U. S. Government Printing Office, Washington 25, D. C.; 26 pages; 10¢.

IT NEEDN'T BE CONFUSING



Packaging is becoming a science. The 1945 Packaging Catalog lists 47 styles of folding cartons alone... and more have been developed since.

In order to get the one package best suited to your needs, play safe and call in an OLD DOMINION packaging engineer to solve your problem. His recommendations are backed by years of successful packaging... and by an organization which can plan and produce set-up boxes, convolute, spiral-wound and corrugated containers as well as folding cartons.

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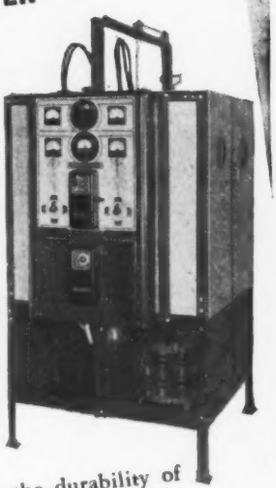
★ *Accepted by the Textile and Dyestuff industry as the standard accelerated testing machines for determining the light fastness, weathering and washing qualities of materials.*

Weather-Ometer
Fade-Ometer
Launder-Ometer

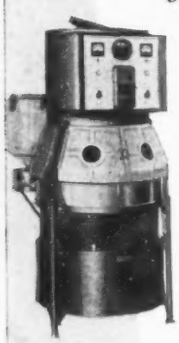
ATLAS *twin arc* WEATHER-OMETER



Faithfully duplicates the combined weathering effects of sunlight, rain, heavy dew and thermal shock; accelerated to reduce years of actual weathering to a few days of testing.

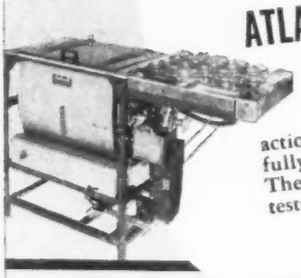
The new Twin-Arc Weather-Ometer is equipped to take large size textile specimens in order to meet the new Federal Specifications demanding accelerated weathering tests. Full automatic control of light and water periods is provided by the Atlas cycle timer unit which can be set to meet standard and special requirements of weathering tests. A direct reading thermal regulator, automatic shut-off switch and a running time meter are included as standard equipment. After setting exposure cycles on the control panel the Weather-Ometer can be safely left in continuous operation overnight without attention except to replace carbons once in 24 hours.

The Atlas Weather-Ometer proves the durability of materials under exact conditions of weathering found in actual use in outdoor exposure.



ATLAS FADE-OMETER

The recognized standard testing machine for determining the fastness to light of dyestuffs and dyed fabrics. Specimens are rotated around the Atlas Enclosed Violet Arc—the closest approach to natural sunlight—in masked holders. Automatic temperature control to within ±3° F. and humidity regulated by a constant reservoir according to requirements of tests. Operation is completely automatic without attention from operator; can be left in continuous operation overnight.



ATLAS LAUNDER-OMETER

The standard laboratory washing machine of A.A.T.C.C. for testing color fastness, staining, shrinking, resistance to washing and mechanical action. All factors including washing action can be carefully controlled and reproduced identically at any time. The new preheating loading table increases accuracy of tests by starting all samples at uniform temperature.

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Originators and sole manufacturers of accelerated testing devices for over a quarter of a century.

Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Sugar-Maple Wood Used for Shuttles

To assist shuttle manufacturers in overcoming a threatened shortage of wood preferred for shuttles (flowering dogwood) the Forest Products Laboratory of the U. S. Department of Agriculture investigated possible substitute woods and found that the most promising in properties, service tests, and availability was open-grown sugar maple.

Dogwood grows throughout a wide range of the hardwood and softwood forests east of the Great Plains but attains suitable tree sizes only in the southern part of its range. A small tree, it is scattered through forests in which other species predominate. Open-grown sugar maple grows in pastures and in the more open portions of farm-wood lots in many of the Northern states east of the Mississippi river. This type of timber is rarely logged and exists in large diameters, allowing larger clear cuttings than does dogwood.

The conditions of its growth, conducive to rapid growth and wide annual rings, make it considerably heavier and harder than forest-grown wood of the same species. This was established several years ago by the Forest Products Laboratory in a search for sugar maple of extreme hardness; and when the

The *New* SMITH-DRUM *TWO-WAY* Package Dryer

This Machine employs an entirely new principle which cuts drying time 60% to 75% and saves up to ½c per pound of yarn. It uses less electricity . . . prevents migration of color . . . eliminates salt deposits. Yarn is delivered in better condition because of short drying cycle. Direct colors can be turned out in less than 3 hours. Drying is more uniform than by any other method. Write, wire or telephone for complete details.

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549	1.07	1.42	3.84	6.14	15.35
1049	1.17	1.98	7.68	12.28	30.70
2349	1.45	3.53	17.65	28.24	70.61
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scarcity of dogwood became pronounced during World War II, comparative tests of various properties of open-grown sugar maple and dogwood were made.

Among properties used for comparison of the two species were hardness, shear strength, shrinkage, and specific gravity—the latter a fairly reliable index of general strength properties. The properties tested were selected because any wood, to be suitable for shuttles, must possess them in a high degree, as does dogwood.

In addition to making the comparative tests of properties, the Forest Products Laboratory prepared experimental shuttle blanks for a manufacturer, who made finished shuttles of them and put the shuttles in service. In the looms, these shuttles wore well and smoothly and showed considerable resistance to denting and splitting. A service life totaling as high as 240 days of continuous use was reported for some of these shuttles. As a result of the tests, the shuttle maker has increased his production of shuttles from open-grown sugar-maple trees. *(R-222)*

Be on Lookout to Employ Desirable War Veterans

There are many veterans well suited for work in the mill, and it would be worth while to attract them there as soon as possible. A worker who comes to the mill as his first choice is going to be a better employee than the one who comes there as his last choice.

To some extent, it is the problem of management to wage a campaign to obtain the most suitable veterans for mill work; but most of the real "convincing" will be done by foremen. Foremen should make fewer bad guesses than anyone else, for their experience teaches them what will be needed and who might fit a particular job.

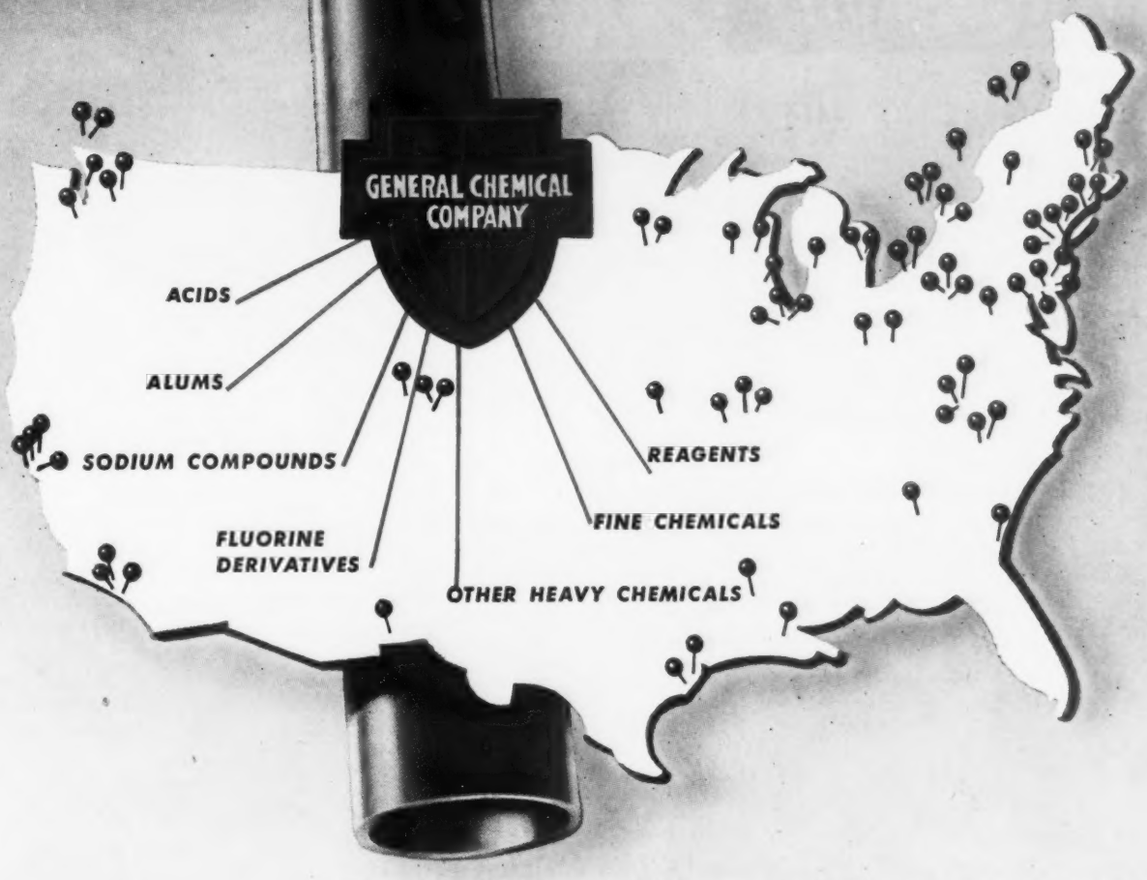
This is no plea for the mill to recruit ex-service men in vast numbers, but only to win the interest of those whose employment in the mill would be mutually beneficial. *(R-218)*

Let Workers Check Their Own Performance

Mill reports serve many useful purposes. They are the starting point for stock records, cost analyses, wage studies, etc. The progressive foreman or executive fully understands their value in these respects, but many foremen may not have used reports for the most modern reason of all: to get employees to review their own work.

The information and figures requested for reports should be practical and logical, adding to the detailed knowledge

Supply Line for American Industry...



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STANDARDIZE YOUR EQUIPMENT WITH PYRENE

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WOOD, TEXTILES, RUBBISH, USE PYRENE SODA-ACID, FOAM, CARTRIDGE-OPERATED OR PUMP TANK WATER AND ANTI-FREEZE TYPES.
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Pyrene FOAM
GASOLINE, PAINTS, OILS AND FLAMMABLE SOLVENTS, USE PYRENE FOAM AND VAPORIZING LIQUID EXTINGUISHERS.
for class C fires
ELECTRICAL EQUIPMENT WHERE EXTINGUISHING AGENT IS A NON-CONDUCTOR. USE PYRENE VAPORIZING LIQUID EXTINGUISHER.

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of the operations; but part of the material should cause the employee to examine his own work more closely. A request for a report on his activities makes him realize his job is considered important.

The foreman who uses such reports as a basis for praise, while letting the individual worker do his own critizing when his report makes a poor showing, has a powerful means for gradually improving the results obtained. Numerous small savings and improvements will be discovered, and employees will be likely to correct any poor work habits they have been able to see for themselves. (*R-216*)

Turkey Has Need for Textile Industry

There are installed in Turkey, roughly, a total of 250,000 spindles, of which half are privately owned and half are owned and controlled by the government. The latter are operated by the Sumer Bank, a government institution established for the purpose of expanding industrial ventures.

The government sets prices. These prices are governed by what is deemed best for the economy of the country, and it does not matter much whether operations show a loss or a profit.

Based upon the population of the two countries, the spinning capacities of Turkey and the United States are as follows:

U. S. (inhabitants per spindle).... 5.4
Turkey (inhabitants per spindle).... 72.0

Considering that climatic conditions in Turkey are about the same as in the United States, it is evident that much room exists for considerable plant expansion.

The figures below are interesting, in that they reveal the production increase in the Turkish textile industry between 1936 and 1944.

Cotton yarn and cloth production (metric tons)

Year	Government owned	Privately owned
1936	3,732	11,304
1944	9,636	16,560
Increase 260%		

Wool yarn and cloth production (metric tons)

Year	Government owned	Privately owned
1936	1,020	1,822
1944	3,624	4,368
Increase 360%		

These statistics, however, do not give the true picture of consumption. All over Turkey, the peasants spin their own wool by hand, knit stockings by hand, and weave cotton cloth by hand.

I have been in a small town which

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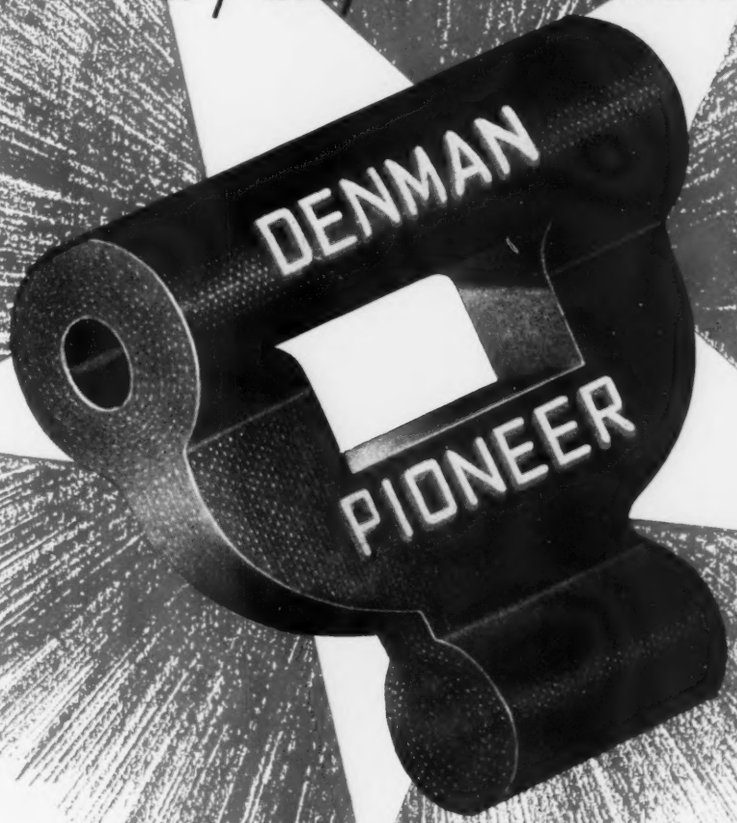

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had a considerable weaving industry. The yarn was bought from the cotton-spinning plant, spooled, and warped on a vertical revolving rack. The rack was so high that the operator had to stand on a stool to reach the top of it. The cotton cloth was woven by hand.

Remarkably enough, speed of production on the hand loom was about 100 picks per minute, and a good quality of cloth was made. The counts used were 12s or less, and the cloth was generally woven loose. About two or three yards an hour came off each loom.

Recently, we made an excursion to a neighboring village and bought several pairs of hand-knitted wool stockings. Coarse counts, something like 1.00 hank roving, were used. The stockings cost $2.75 per pair. An old woman who was spinning wool yarn by hand said to her companions, and it was later translated for us, "Isn't it remarkable how little these foreigners know? Even our little children know all about this, and the foreigners don't." *(R-219)*

Veteran Received Textile World Overseas

An orchid to TEXTILE WORLD's mailing section. Between it and the U. S. mail TEXTILE WORLD reached me faithfully every one of 31 months overseas, which is more than I can say for most of my magazine subscriptions. *(R-220)*

Bad Working Conditions Can Be Very Expensive

Although working conditions in the mill may in general be ideal, it is profitable to watch for exceptions. A sure way to spot them is to check on the jobs where labor turnover or discontent among workers has been highest. Such surveys of conditions surrounding specific jobs will uncover many minor changes which can be made at very little cost.

For example, the matter of a worker's position at his tasks has received too little attention. Few persons like to stand or sit with their backs to everyone else. If they turn around, they give the impression of not tending to their duties; yet if they stay in position, their tasks soon become unbearably monotonous. Especially is this true when they face a blank wall immediately beyond their equipment. Avoid shutting off an employee in this way, and you go far toward reducing the labor turnover on that job.

Glare is a common cause of inefficiency and discontent. Paint may re-

Salute to THE TEXTILE INDUSTRY

During 1944-45, Union Pacific paid tribute to American industry on its radio program "Your America", broadcast each week over a nation-wide network. Representatives of 70 major industries were given the opportunity to present the dramatic story of their respective industry's contribution to the welfare of the nation.

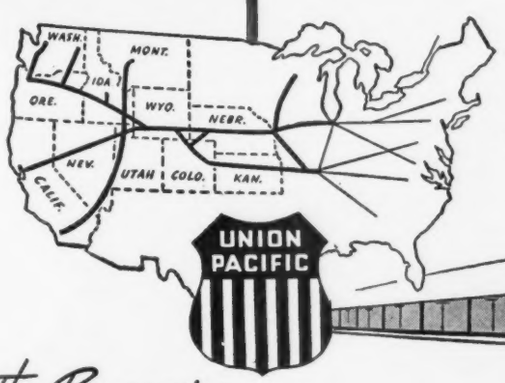
For example, on one program our guest speaker, Dr. Claudius T. Murchison of Washington, D. C., represented the Cotton Textile Institute. On another program, G. Norman Winder of Craig, Colo., represented the National Wool Growers' Association.

Union Pacific—along with other railroads—was then engaged in moving vital wartime materials. Your industry and the nation generally knows what a tremendous task that was and how efficiently it was accomplished.

Today, Union Pacific is prepared to continue its assistance to your industry by speeding the distribution of peacetime commodities. Equipment, facilities and personnel are geared to provide unexcelled service.

A staff of trained traffic men stand ready at all times to cooperate with you.

For fast, dependable service . . . .



Be Specific— say "Union Pacific"

★ *Union Pacific will, upon request, furnish information about available industrial and mercantile sites in the territory it serves. Address Union Pacific Railroad, Omaha, Nebraska.*

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Floor maintenance the Tennant *dry cleaning* way takes minutes, not hours . . . completely eliminates scrubbing and mopping . . . and doesn't interfere with mill operations.

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Restores Floor Surface—Removes frayed, softened topwood fibers to provide a new live floor surface.

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Keeps Floor Smooth, Clean and Bright—Fast, easy *machine dry cleaning* keeps floors clean, bright, and wear-resistant *always!*

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move this trouble at a fraction of the cost of training new employees to keep certain jobs filled. Correction may be made by proper shading, but it must be remembered that nothing will be gained by the elimination of glare if it is done in such a manner that it results in insufficient lighting.

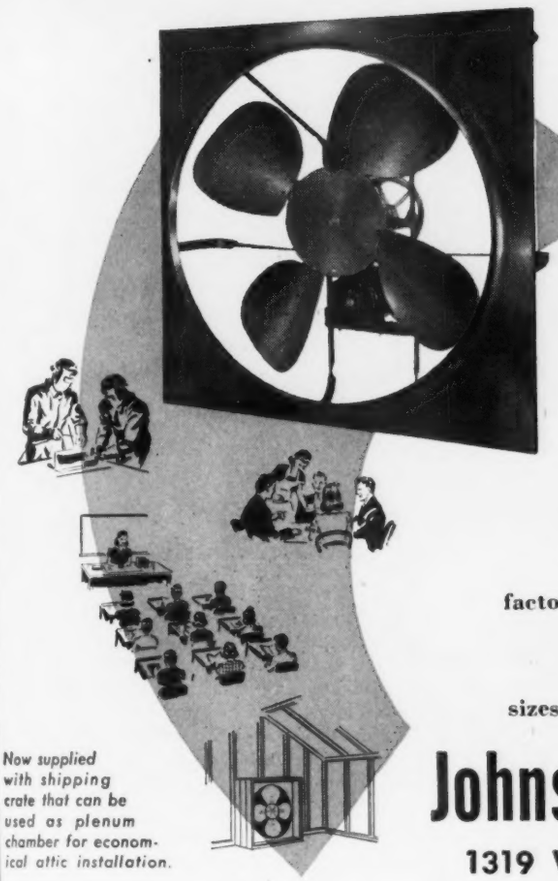
As a rule, access to daylight can be considered good for worker morale; but artificial lighting must be adequate also, and under the worker's control, to maintain the proper balance between the two sources of illumination. This point needs to be checked frequently, for trouble may occur only at certain hours of the day and may even vary with the seasons. Over-all efficiency suffers when these conditions exist.

Heat and ventilation vary widely at different spots in a large room. Although most of the workers may feel comfortable, it is well to check each position occupied by a worker. Do not be too quick to blame it on imagination when trouble is reported. Even the thermometer does not register drafts, which are more serious than a slightly low temperature. Check windows frequently as a possible source of drafts. Try low partitions of inexpensive wallboard to stop floor drafts brought about by unavoidable conditions. Individual heating units for certain spots may be necessary.

Whatever the cost, do not consider it too high until you compare it with such items as loss of time due to colds, decreased worker efficiency, and increased cost for training replacements.

Only in recent years have the effects of noise received much study in relationship to efficiency. It seems certain, however, that noise adds greatly to nervous strain, irritability, and errors. Mill management will find every possible reduction of noise well worth the effort. Construction details also deserve a part in future planning, and progress along this line may be surprising to those who have not kept in touch with the advances made in noise elimination. After noise has been reduced to a minimum and until the plans call for new construction, workers who seems most affected by noise should be placed as far from its source as practicable.

The mill executive cannot keep in constant contact with conditions in every position. He can, however, check often enough to cover various times of the day and seasons of the year. When this information is supplemented by reports from the employees themselves, he will have a fairly accurate idea of the places where corrective measures should be taken to reduce discontent, inefficiency, lost manhours, and lost employees. (*R-217*)



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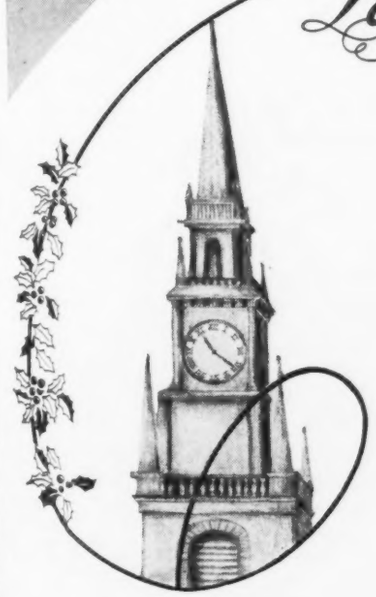

Visions of the year to come, appear on the horizon . . . and women once more lift their eyes and renew the hope for a world of beauty. They dream of a life filled with infinite loveliness — and to the feminine mind, an essential part of continued charm are stockings gossamer-sheer, with the sleek fit and dull softness that only DuraBeau finish can give them. Women's thoughts fasten on the "miles more wear" assured by Stockings finished with DuraBeau . . . and on the lasting loveliness that such hose can bring to their legs. Their attention is caught, too, by the added attraction and wearability inherent in fabrics that have had lasting beauty "sealed in" with DuraBeau finish.

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Questions and Answers

Loom Stops on First Pick Corrected With Fork

Technical Editor:

We are weaving clip-spot marquisette with ground filling of 42s carded yarn and spot filling of 6½s carded yarn on Crompton & Knowles, 4x1 box, center filling fork, model C-6 looms. The shuttle has fur in it which gives sufficient drag to the filing; but when a loom doffs on the 42s filling, it quite often stops on the first pick. Can you account for this? (9082)

The trouble would seem to be in the setting or timing of the center filling fork. The fork apparently is timed slightly early, or the tines on it are too short. Your trouble should be solved if you lengthen the fork tines and time the fork a little later, setting it slightly wider to give more tolerance between the knock-off plunger and the dog.

Maximum Yarn Twist Not Desired in Filling

Technical Editor:

One of the mills for which we sell makes Type 140 wide sheeting. The mill has been weaving the cloth considerably on the heavy side in order to maintain the necessary tensile strength. I am of the opinion that this would not be necessary if the correct amount of twist was put in the yarns—21s warp and 23s filling, from 1 1/16-in. cotton. What do you consider the correct twist for maximum tensile strength? (9083)

The correct twist multiplier for maximum yarn strength when running 1 1/16-in. cotton, whether 21s or 23s, is 4.10 (TEXTILE WORLD, January, 1945, page 81). The formula for the turns per inch would be: 4.10 x square root of the yarn number (21s or 23s).

This sheeting construction appears, from the yarn numbers alone, to be a little out of the ordinary. Most mills use a filling yarn heavier than the warp yarn; and unless the cloth in question is woven with a great many more filling ends than warp ends per square inch,

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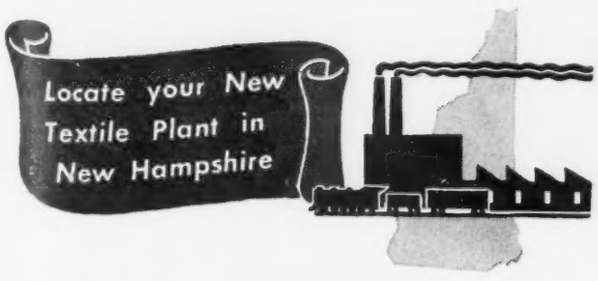
New Hampshire plants have, in addition, the great advantages of low power rates, first-class transportation and nearness to mass markets. Quantities of pure, soft water are available. An alert highway patrol system keeps roads open every day in the year.

Ask for your copy of the new booklet on location of the medium-sized industry: "A Plant in New Hampshire." Address Edward Ellingwood, Industrial Director, 91 State Office Building.



NEW HAMPSHIRE

State Planning and Development Commission

CONCORD, New Hampshire

(Advertisement)

There is a LUBRIPLATE Dealer near you . . . at the other end of your local telephone. He stands ready to prescribe the LUBRIPLATE Lubricant that will make your machinery last longer, run smoother and produce more product at less cost. He has a complete stock on hand to give you prompt delivery. Give him a ring.

LUBRIPLATE
Lubricants definitely reduce friction and wear to a minimum. They lower power costs and prolong the life of equipment to an infinitely greater degree. LUBRIPLATE arrests progressive wear.

LUBRIPLATE
Lubricants protect machine parts against the destructive action of rust and corrosion. This feature alone puts LUBRIPLATE far out in front of conventional lubricants.

LUBRIPLATE
Lubricants are extremely economical for reason that they possess very long life and "stay-put" properties. A little LUBRIPLATE goes a long way.

LUBRIPLATE
FISKE BROTHERS REFINING CO.
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DEALERS FROM COAST TO COAST
CONSULT YOUR CLASSIFIED TELEPHONE BOOK

MACHINERY COSTS MORE THAN OIL OR GREASE

Plant managers dread costly machine replacements not to mention production losses incurred by machine stoppages.

Plant managers know that each piece of machinery is only of value to them so long as its bearings, gears, chains and other moving parts withstand the heavier loads and increased speeds imposed by modern industrial demands. Above all, they realize that *proper lubrication* is the chief requisite of efficient and continuous machine operation. It is understandable that they were unwilling to continue to spend dollar after dollar for replacements of scored bearings, chipped gears, and broken chains whose loss could be avoided by proper lubrication from the start.

The increased speeds and heavier loads of modern operation further accentuated the need for better lubrication. So aggravated did the situation become that unless proper lubricants were developed, many of the advantages that improved design and tougher metals imparted to machinery, would be lost. Scientific investigation of the problem by Fiske research engineers brought out two facts. The first was that no one oil or grease would suffice for all industrial applications but a line was required to meet the several conditions. The second was that all lubricants must have in common, greater film strength, better lubricating qualities, and offer protection against rust and corrosion. As the result of this research the LUBRIPLATE line of lubricants was developed.

LUBRIPLATE does reduce friction and wear to a minimum. It is waterproof so prevents rust and corrosion. The "stay put" quality of LUBRIPLATE is exceptional. It offers greater film strength without causing "drag." Unsolicited letters from Plant Managers and Maintenance Men the country over relate how LUBRIPLATE Lubricants cut replacement costs, reduce machine stoppage, save on power consumption, and permit heavier bearing loads and increased machine speeds. In the LUBRIPLATE line there is a sufficient variety of densities and consistencies—oil and grease type—to satisfy all lubrication needs. LUBRIPLATE distributors the nation over are in a position to make prompt delivery of your LUBRIPLATE requirements. LUBRIPLATE Service Engineers welcome the opportunity to help you with your lubrication problems. A complementary copy of the "LUBRIPLATE SERVICE HANDBOOK" containing valuable information on the subject of lubrication will be sent you upon request. Write for it today.

QUESTIONS AND ANSWERS

it would have extremely low strength filling-wise.

It would be most unusual to spin the filling with a twist multiplier of 4.10, because of the trouble that would arise in weaving it. Could it be that someone has specified a basically unsound construction and the mill is heavying up on the filling in an effort to attain a little strength?

Of course, if the weakness is warpwise, your impression in regard to twist may entirely cover the situation. If using the proper warp twist does not solve the problem, the mill must search its manufacturing processes for the source of the trouble.

Carding Cotton Twice May Be Bad Practice

Technical Editor:

What are the advantages and disadvantages of double carding cotton? (9084)

Double carding of cotton is to be avoided if at all practicable. Many mills are carding cotton twice, and there are conceivable circumstances under which the practice might be advisable; but generally, it is apt to do more damage than good. This opinion is based on the following points:

1. Double carding results in a higher percentage of broken fibers.

2. It can easily increase the number of neps.

3. It accomplishes very little cleaning during the second run.

4. It increases waste unnecessarily. (Since the motes and leaf are removed during the first run, the waste made during the second run is almost entirely fly and strips—mainly strips. Tests on card strips have proved that strips contain a high percentage of good, long fibers which should not be discarded if it can be avoided.)

5. Double carding increases labor so prohibitively that only a premium product can stand it.

Circumstances under which double carding might be excusable are:

1. If the quality of the product demands a grade of yarn higher than that now being produced, but not sufficiently high to justify buying a better grade of cotton or processing the stock through a comber, double carding might possibly be approached as a compromise measure. Even then, better opening and picking would usually be preferred.

2. When running blends of cotton with synthetics or cut wool top (both clean fibers), if the opening and picking are of only fair quality, many mills resort to double carding. Here again, better preparation and single carding are preferable; and it might prove

(*Continued on page 168*)

MANUFACTURERS' BULLETINS

READERS interested in literature reviewed on these pages may secure copies with time-saving postcard below. Mark what you want on it and send it to Textile World, 330 West 42nd St., New York 18, N. Y. Be sure to give your name and company connections.

Free FOR THE ASKING

1. The new Atwood ring twister, available in two models for rings up to 4½ in. and 5½ in. in diameter, is described in a four-page folder issued by the Atwood Div., Farrel-Birmingham Co., Inc. Several features of the machine, such as the twist gearing, builder motion, etc., are illustrated.

2. Three developments in wool dyeing —minimum chrome in top chrome dyeing, metallized dyes, and continuous dyeing—are presented in Technical Bulletin No. 768, published by Calco Chemical Div., American Cyanamid Co. The bulletin is illustrated with tables, charts, and photomicrographs.

3. Sixty-six tips that save time and money in textile-mill cleaning are given in a 16-page booklet prepared by Oakite Products, Inc. Simple, concise directions for cleaning heddles, slasher drums, chains, etc. are given.

4. Corrosion-resistant materials and methods of construction for tanks, towers, floors, etc. are presented in a 52-page manual made available by the U. S. Stoneware Co. Drawings, tables, and photographs present much data for use by engineers.

5. A Towmotor data file, containing descriptions and construction details of each model of the Towmotor lift truck, is being issued by the Towmotor Corp. The file also includes a guide for analyzing materials handling problems and suggestions for solving the problems.

6. Stainless-steel applications for wartime and peacetime uses are illustrated in a booklet issued by Republic Steel Corp. Stainless steel for batch-process containers is said to be of particular interest to the textile industry because the steel will not react with the process materials.

7. The use of springs for hangers and for eliminating vibration is presented in Catalog 2026, published by Blaw-Knox Co. Schematic drawings are used to illustrate a variety of applications of the springs.

8. Valve repair and replacement record sheets are being issued by Jenkins Bros. The sheets are arranged so that the maintenance man can tell at a glance if it is cheaper to repair or replace a particular valve.

9. The New England textile industry's war production record is cited in "What New England Did in the War," published by the New England Council. It is stated that more than 2½ billion dollars worth of textiles and wearing apparel were produced in the New England states.

10. Information on the use of silicates of soda in industry is available in a number of technical publications made available by the Philadelphia Quartz Co. The bulletins are described in the December, 1945, issue of *Silicate P's & Q's.*

11. Applications of Koroseal, both in the form of film and as a coating for fabrics, are illustrated in color in a booklet issued by the B. F. Goodrich Co. Illustrations show a variety of uses of Koroseal in consumer products.

12. Photocopying of written, printed, typed, drawn, or photographed material with the A-PE-CO Photo-Exact equipment is discussed in a four-page folder issued by the American Photocopy Equipment Co. Several illustrations of photocopied matter are given.

13. Worsted manufacturing from wool fleece to finished product is described and illustrated in a book of training material issued by Arlington Mills. All the important steps of worsted manufacture are presented.

14. Hydraulic elevating tables to meet a variety of industrial needs for a portable, adjustable-height working surface are illustrated in a folder issued by Lyon-Raymond Corp. Several features of such tables are described in detail.

15. Transmission belting, featuring Highflex, said to be the first successful square-edge, foldless, hard-duck transmission belt, is the subject of a new catalog section published by the B. F. Goodrich Co. Details of the manufacturing and testing of Highflex are given.

16. Foamglas, a cellular glass insulating material, is the subject of a 24-page, illustrated booklet published by Pittsburgh Corning Corp. The booklet gives a brief account of how Foamglas is made and describes some of its physical properties.

17. Dispersol resin emulsions for application to fabrics to enhance their appearance and to make them resistant to water, mildew, moths, and fire are among the postwar plans announced in the fall, 1945, issue of *Onyx Auxiliary,* published by the Onyx Oil & Chemical Co. Included also is a short article on the company's product-testing laboratory.

18. Postwar knitting machines being manufactured by Textile Machine Works are described in the October, 1945, issue of *The Yarn Carrier.* Several photographs show full-fashioned knitting machines in various stages of construction.

19. A soap builder and detergent, said to be free from inactive materials and moisture, is described in a vest-pocket-size folder issued by Pennsylvania Salt Mfg. Co. The folder contains a brief description of Pensal and directions for its use.

20. Testing slivers on the Saco-Lowell sliver-tester is briefly described in the November, 1945, issue of *Electromet Review.* A

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TEXTILE WORLD
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McGraw-Hill Publishing Co., Inc.

photograph of a bobbin of roving being tested on the sliver-tester is shown.

21. Velon plastic fabrics for use as upholstery, drapery, etc., are presented in a well-illustrated booklet published by Firestone Industrial Products Co. The possibilities for styling Velon fabrics are emphasized.

22. A pay-as-you-go income-tax chart, which lists weekly payroll deductions for salaries up to $200 per week and for personal exemptions up to ten dependents, has been prepared by Thomas & Skinner Steel Products Co. The tax deductions are based on salary graduations of one dollar.

23. A condensate return system for processing at high pressures is described in Publication No. 3250, distributed by the Cochrane Corp. The system described is said to be efficient with low pressures as well as with high pressures up to 250 lb.

24. The first overhead cleaner built by Parks-Cramer Co. is described and illustrated in the November, 1945, issue of *Parks' Parables*. It is said that the first fans used were taken from humidifiers.

25. Oil-less bearings made of three different kinds of materials are briefly described in the October, 1945, issue of *The Reservoir*, published by Bound Brook Oil-Less Bearing Co. Porous bronze, sintered iron, and graphited bronze bearings, sleeves, etc., are illustrated.

26. Sealed-power motors for use in dusty or moist locations are described in the four-page bulletin issued by the Crocker-Wheeler Div., Joshua Hendy Iron Works. Cut-away views of six typical applications of the motors are shown.

27. A chemical floor hardener, said to add years of usefulness to concrete and terrazzo floors, is described in the four-page folder released by the Building Products Div., L. Sonneborn Sons, Inc. Known as Lapidolith Liquid, the hardener is protected by a patent.

28. "Arc-Welding Electrodes," furnishing data for the proper selection of electrodes for all types of welding work, is a 32-page catalog published by Wilson Welder & Metals Co., Inc. Chemical analysis, specifications, and other engineering data are given on a wide range of electrodes.

29. Arc-welding machines, utilizing alternating-current transformers, are described in a 16-page booklet published by Air Reduction Sales Co., Inc. Several types of welding machines and transformers are illustrated.

30. Lever-operated gate valves applied to process lines in industrial plants are discussed in a 16-page bulletin issued by Everlasting Valve Co. Three standard types of Everlasting valves are included.

31. "Grime Does Not Pay" is the theme of a four-page leaflet distributed in a campaign for good housekeeping by the B. F. Goodrich Co. The leaflet stresses the objectives of the campaign and gives some definite rules for handling materials and equipment.

32. Power generation by diesel-electric sets is briefly discussed in "Today's Answer Man," a 12-page booklet in color published by Caterpillar Tractor Co. Self-regulating and externally regulated sets are described.

33. Progress in wool finishing is briefly touched upon in the December, 1945, issue of *Dylogram*, published by Dykeman, Loeb & Co. Decreasing shrinkage by the chlorine process and moth-proofing are given as examples.

34. Resistance to heat and corrosion of welding material and data on the chemistry and surfacing of weld metal are given in a reference chart on alloy electrodes announced by Arcos Corp. Information on welding current and voltage is also presented.

35. A circular loom designed to weave coverings and tubes from ¼ in. up to 3 in. in diameter is illustrated and described in a four-page leaflet, published by Frank D. Saylor & Son. The leaflet is illustrated with pictures of the circular loom.

36. "New Developments in Coated Fabrics" is the title of an article appearing in the December, 1945, issue of the *Du Pont Magazine*, published by E. I. du Pont de Nemours & Co. Inc. Coated upholstery fabrics are featured in the article.

37. The manufacture of nitro cellulose is described in an article appearing in the December, 1945, issue of *Esso Oilways*, published by the Standard Oil Co. of N. J. The article also gives a brief background of the Hercules Powder Co.

38. The type Y metallizing gun used for spraying metals in a variety of industrial uses is presented in detail in Bulletin No. 49, issued by the Metallizing Engineering Co., Inc. The vital parts of the gun are illustrated with color-photographs.

39. "What is a fluorescent lamp" is explained in No. 1 of the "Know How" lighting series being published by the Lamp Div. of Westinghouse Electric Corp. The booklet also tells how the lamp is made and how it operates.

40. Safety and relief valves in several designs are described in Catalog No. 45, issued by the Farris Engineering Co. A condensed bulletin and price sheet are included as a supplement to the catalog.

41. A "key-kit" built in the shape of a screw-driver and equipped with a handle for holding accessories such as bits, screw-driver blades, etc., is described in a four-page folder issued by Standard Pressed Steel Co. A table lists specifications and prices.

42. Two ranges of pH indicators are described in a six-page leaflet released by R. P. Cargille. Catalog numbers and prices are given.

43. Correct use of fire extinguishers is explained in new instruction cards issued by American-LaFrance-Foamite Corp. The instruction cards can be mounted adjacent to the extinguishers they illustrate.

The postcard requires no postage. After filling out
ing to the numbers of the descriptive paragraphs in this insert. *Check the numbers of the catalogs you want,* and fill in your name and address *legibly* and *completely.*

The postcard requires no postage: after filling out.

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330 West 42nd St., New York 18, N. Y.

I have checked below the numbers corresponding with the items I want, as listed in your January, 1946, "Free for the Asking" insert.

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My Name ..... Title .....
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City ..... State .....

RAYON REPORTS

Published Monthly by American Viscose Corporation, New York, N. Y. JANUARY, 1946

AVC ANNOUNCES EXPANDED CHEMICAL RESEARCH FACILITIES

New improved facilities are now being operated by the Chemical Research Department of American Viscose Corporation. The Department, concerned with research on rayon and other types of synthetic fibers, recently took over expanded quarters in the corporation's Marcus Hook plant.

More than 100 representatives of many crafts, as well as professional chemists, staff the Department, which is divided into four major groups—the High Polymer, Viscose, Yarn Finish and Cellulose Sections, while smaller Divisions comprise the Plastics, Analytical and Machine Shop Groups. Basic work of the Sections shapes up as follows:

High Polymer—Long-range planning and test production of new synthetic resins capable of yielding fibers for textile and other applications.

Viscose—Fundamental research into chemistry and physics of viscose and of viscose rayon spinning; development of new yarns.

Yarn Finish—Investigations of lubricants, dressings, sizes, finishes, etc., suitable for specific yarn uses; testing of yarns and fabrics for ability to stand up under given uses.

Cellulose—General problems dealing with the structure and chemistry of cellulose. Includes the Microscopical Laboratory for independent investigations and aid to all other Sections.

The Plastics Group aids the High Polymer Section in evaluating its products, and studies currently marketed plastic materials, including those of AVC. The Analytical Group serves all Sections, as does the well-equipped Machine Shop Group. A scientific library available to all is staffed by a professional chemist-librarian.

MAKE USE OF 4-PLY SERVICE

1 PRODUCT RESEARCH
Helps you get the right yarn or fiber.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.

3 TEXTILE RESEARCH
Helps solve production and finishing problems.

4 "CROWN*" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

America's largest producer of rayon

Offices: 350 Fifth Avenue, New York 1, N.Y.; Charlotte, N.C.; Philadelphia, Pa.; Providence, R. I.; Washington, D.C.; Wilmington, Del.

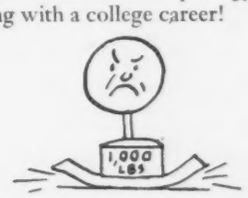
Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED RAYON FABRIC

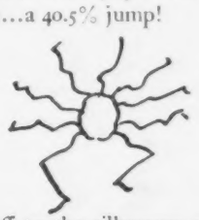
*Reg. U. S. Pat. Off.

RAYON...20 YEARS AGO

Rayon...and rayon alone...will be the subject of study at the next meeting of the North Eastern Section of the American Chemical Society, says an announcement from Massachusetts Institute of Technology. The industrial infant prodigy already is flirting with a college career!



Production of rayon last year reached the staggering new total of 51,049,000 pounds! This compares with 1924's total of 36,328,000 pounds...a 40.5% jump!



It's old stuff to the silkworm and spider, but man is just beginning to understand the business of making spinnerettes that really click for the growing rayon industry. Several specialty firms this month are offering vastly improved spinnerettes...of platinum and glass!

Booklet Tells How CROWN Tested Rayons Acquire Their Crowns

To simplify explanation of how American Viscose Corporation's famous CROWN Tested Plan works, a quick-reading, illustrated pamphlet is now available. Entitled "Life Story of a CROWN Tested Rayon Fabric," it is designed to be useful and informative for manufacturers, buyers and sellers of rayon fabrics. Write today for your copy.

READY TO MOVE AHEAD

DESPITE the troubles which face the world, one fact becomes increasingly evident.

On village streets and city avenues more and more men are wearing the insignia of honorable discharge.

As they increase, so grows the civilian market for textiles of many kinds and for many uses.

With the mills we represent, we have long awaited this time. And have planned how best to meet the needs and demands we knew would come.

Today, our mills and our sales staff are making good use of the background of sales and service which we as selling agents for textile mills have acquired through the past century.

With our organization at a new high in personnel and ability, we are now ready to extend our facilities and resources to additional mills.

Painstaking attention to all phases of production and distribution will continue to characterize our service.

MINOT HOOPER & COMPANY

***Selling Agents*, 40 Worth Street, New York City**

(Established 1841)

BOSTON • CHICAGO • SAN FRANCISCO • ATLANTA

(*Continued from page* 164)

profitable to look into the possibility of running the stock twice through a part of the opening or picking, in preference to double carding, because of the faster production, less waste, and lower cost.

It all boils down to this: The card is a fine cleaning and blending machine; but its operation is costly, slow, and harsh compared with other cleaning machinery.

Another point worth considering is that the cleanliness of the yarn is influenced by the handling the stock receives as well as by the carding. Beginning with opening the bales, extra care should be exercised in:

1. Removing oily, dirty, or inky tags of cotton present on the sides of the bales.
2. Cleaning the floor and machines in the opening and picking department, so that waste is not blown or brushed onto the cotton or into the hoppers.
3. Maintaining a *good* cleaning schedule on cards, drawing, fly frames, and spinning frames. (This schedule should emphasize cleaning the parts which might permit waste to drop into the stock. For example: The sides of a card look bad when they are dirty, but this condition does not hurt the work; while lint collections on the comb, around the calendar roll, etc. will affect the stock.)

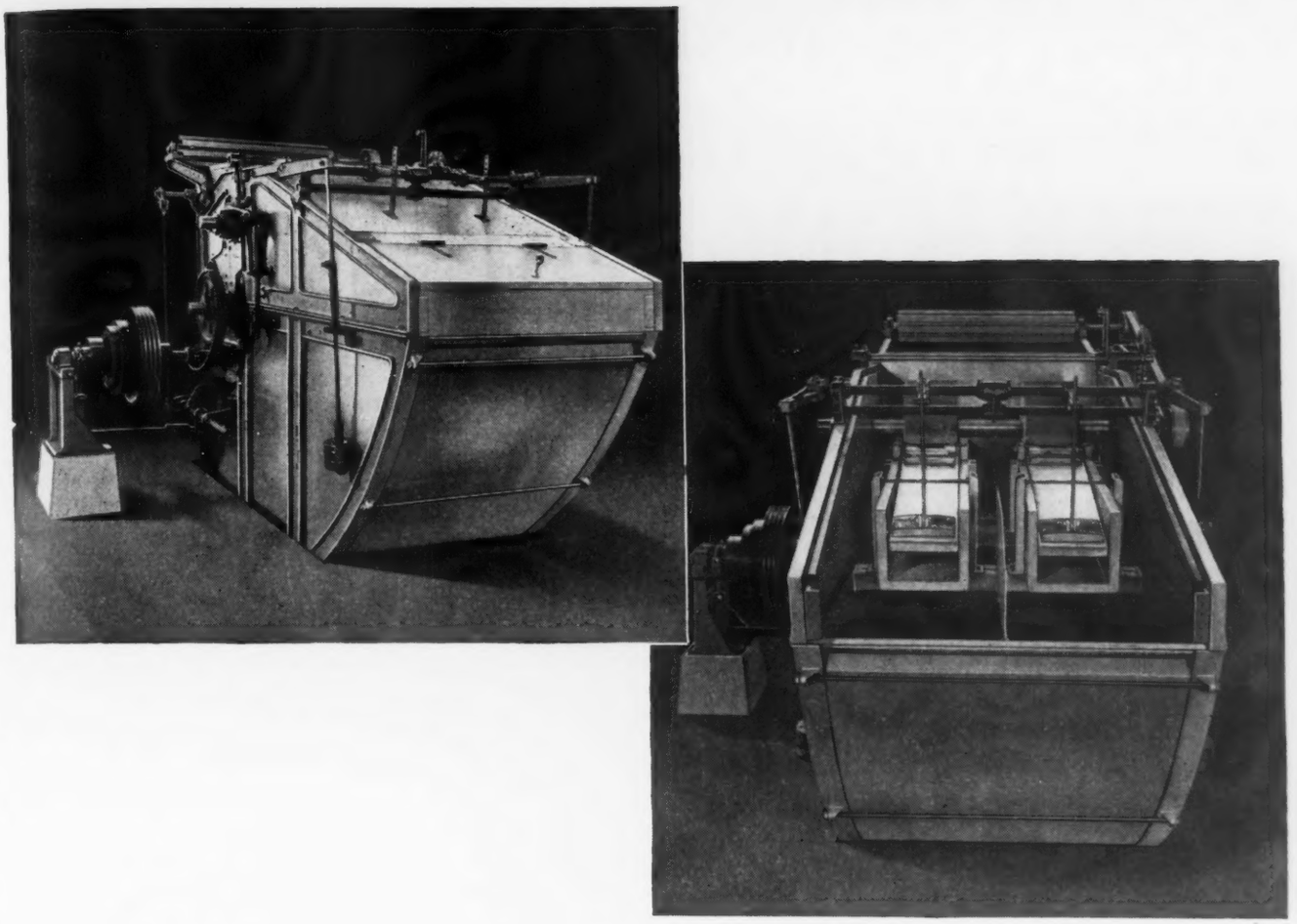
Cotton Machinery Used For All-Wool Lap

Technical Editor:

We are planning to run a 50-50 blend of cut wool top and cotton on our cotton machinery. We have not decided yet at what point we will do the blending, and we may want to make a lap of 100% wool. What is the best way of making such a lap? (9085)

Making a lap of 100% wool is relatively easy. A few points which should be observed are:

1. Put the wool through as little opening machinery as possible. If you intend to run all undyed wool, you will need only to blend the different lots of wool. If the lots are run through the mill separately, you can by-pass the opening machinery and feed the wool directly to the picker. If for any reason you need to blend the wool (different lots or different colors) you will need a process or two in the opening room.
2. Slow your beater speeds to 600 or 800 r.p.m. if the yarn is to be woven. If it is to be used for knitting, any beater speeds from 600 to 1000 r.p.m. should be all right, though the higher speed is not actually needed. About 600 to 800 r.p.m. is preferable in all cases, and Kirschner beaters are usually preferred



FOR FULLING "WHITES"
Specify
THIS NEW HUNTER ALL STAINLESS MILL

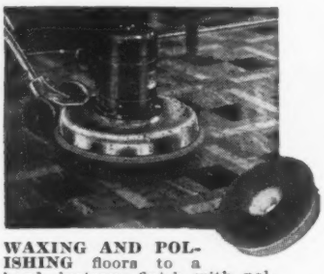
Pictured on this page are two views of the Hunter #21 Stainless Steel Fulling Mill. Designed for the milling of "whites" exclusively, this modern machine offers you these outstanding mechanical and commercial advantages:

1. Entire body of mill as well as doors fabricated from heavy gauge stainless steel. Top may be wood or stainless.
2. Sectional rubber rolls with stainless steel shafts.
3. Stainless steel crimping boxes and stop motions.
4. Stainless steel soap boxes and unloading reel.
5. V-belt motor drives, pneumatic top roll tension, roller bearings, Alemite Zerk lubrication, etc.

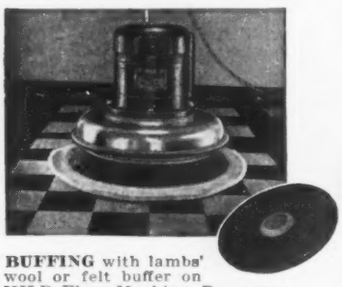
We cordially invite you to write us for more complete details on this newly designed Fulling Mill as well as for the names of users and their experiences with this new unit.

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS, U.S.A.
FOUNDED 1847

KEEP ALL YOUR FLOORS CLEAN AND SLIP-SAFE with the HILD FLOOR MACHINE

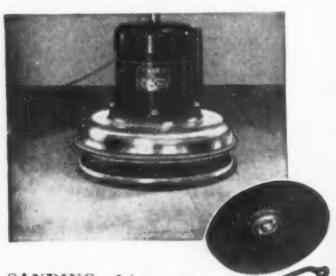


WAXING AND POLISHING floors to a hard, lustrous finish with polishing brush on HILD Floor Machine.



BUFFING with lambs' wool or felt buffer on HILD Floor Machine. Removes streaks, goes under radiators, polishes waxed cove baseboards.

STEEL - WOOLING with pad and holder on HILD Floor Machine. Used for dry cleaning, polishing, scrubbing, wet buffing of penetrating seals, etc.



SANDING disc on HILD Floor Machine sands wood or cork tile. A 3-inch flat counter-sunk plate holds sandpaper firmly to rubber padded metal disc.

Plain-Handle Standard Floor Machine
Used to scrub, wax, polish, buff, sand, grind and steel-wool floors of all kinds.

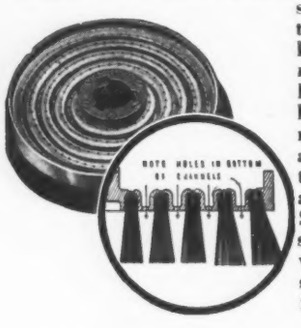
Portable Tank Type Shower-Feed Floor Machine
Scrub floors with the Shower-feed Brush shown below. Also waxes, polishes, buffs, sands, grinds and steel wools.

HILD Floor Machines are designed for use with easily interchangeable attachments to condition and maintain floors of all kinds . . . either in the mill or in office areas. They speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. Scrubbing with the Tank-Type Machine and Shower-feed Brush gets floors cleaner with less scrub-soap solution. . . . cuts Soap costs . . . does not splash water on machinery or furniture . . . requires less time and labor to pick up dirt and water.

The HILD Machine operates so easily that either a man or woman can run it for long periods without tiring. It is practically noiseless in operation. The G. E. Capacitor type motors have no carbon brushes or commutator to gather dust and lint or wear out . . . made for long, trouble-free service.

HILD Patented Shower-feed Brush

This diagram illustrates the famous HILD Shower-feed principle. Scrub-soap solution is fed from the storage tank to the back of the brush . . . then passes through accurately spaced holes penetrating the brush back *between each row of bristles.* Solution is whipped up by the bristles into rich cleansing suds and evenly distributed under the brush area. Result: Speedy, thorough scrubbing action with minimum soap solution. The brush is refillable.



HILD System MAINTENANCE EQUIPMENT & SUPPLIES

Write today for FREE CIRCULAR

HILD FLOOR MACHINE COMPANY

1313 W. Randolph St., Dept. TW1, Chicago 7, Ill.

to blade beaters, if they are already on hand.

3. Maintain as uniform humidity as possible in the picker room. A relative humidity of 50 to 55% should be satisfactory. Your greatest trouble with humidity in the picker room probably will come on cold, rainy days. If you have no control of humidity, you can ease the problem by closing up the room and raising the temperature.

4. You will probably need to run roving in with the laps to prevent splitting.

5. Keep some graphite or Spanish whiting handy to the picker tender to apply to the lap pin if the wool has a tendency to stick to the pin when the picker is doffed.

Can Low-Grade Cotton Be Combed to Advantage?

Technical Editor:

Can a commercially acceptable yarn be spun from a low-grade cotton which has been "scratched combed?" How fast can the card and comber productions be set on such a layout? (9086)

Since the comber is not a cleaning machine, it is hardly advisable to try, by combing, to produce a yarn from a grade of cotton which will not yield an acceptable carded yarn. The primary purpose of a comber is to remove short fibers. In doing this job, the comber also accomplishes some cleaning; but its cleaning capacity does not compare with that of the card.

Tests made by the U. S. Dept. of Agriculture reveal that the chief advantage to be derived from combing cotton is an increase in yarn strength. According to these tests, "an increase of 5% in the amount of comber waste taken out is equivalent, as far as yarn strength is concerned, to an increase of $\frac{1}{32}$ in. in the staple length of the cotton used."

Yarn appearance, as revealed in the same series of tests, was increased one-third of a grade—from B to B+ in the case of 22s yarn and from C+ to B— in the case of 60s yarn—over carded yarns from the same samples of cotton. This increase resulted from a waste removal of 0.57% at the comber.

Increasing the comber waste up to 24% did not further improve the appearance of the 22s yarn. The 60s yarn gained another one-third grade, from B— to B, in appearance when approximately 8% waste was taken out. No further improvement occurred up to 24% waste removal.

The prohibitive factors of most low-grade cottons are trash, color, neps, etc. The chief benefit gained by combing is an increase in strength, rather than a

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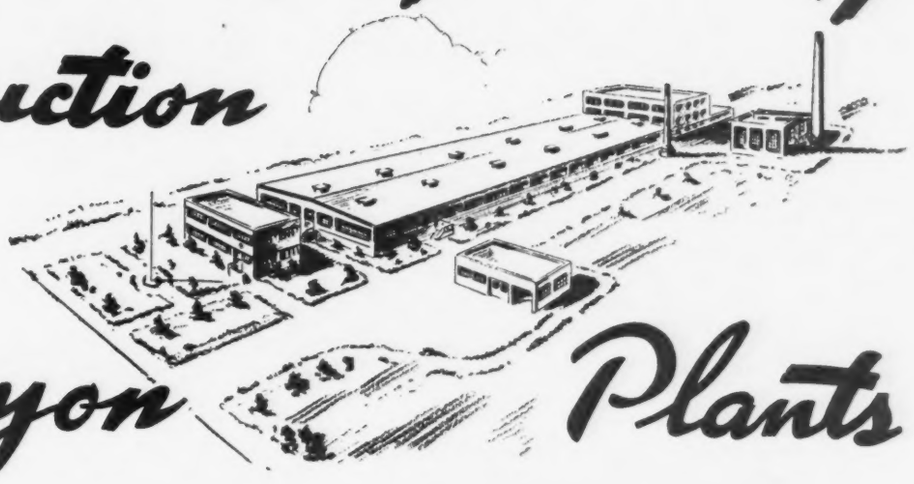

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significant improvement in appearance. Therefore, you would do well to make exhaustive comparisons of cost before subjecting cotton unacceptable for carded yarns to the relatively expensive combing operation.

Regarding the card and comber rates of production, the pounds per hour put through the card would not be affected by adding the combing operation. The card has a definite job to do in opening fibers and cleaning them, and this job cannot be accomplished on any other machine.

The usual limitations of good carding will remain paramount.

The production at the comber will depend upon the amount of waste removed. As the waste taken out in the form of noils increases, the delivery production of the machine decreases. Most mills using combers are able to maintain a comber production of 12 to 20 lb. per hr. per machine, depending upon the requirements of the yarn spun.

However, a new comber developed by Cramerton Mills, Cramerton, N. C., (TEXTILE WORLD, July, 1945, page 96) is said to attain a production of 36 to 40 lb. per hr., double the production of conventional combers.

Ammoniated Potash Not a Bleaching Agent

Technical Editor:

We would like some information on the bleaching of wool with ammoniated potash. What is its chemical formula, method of use, and where can it be obtained? Any other information will be appreciated. (9080)

The use of ammoniated potash as a bleaching agent for wool is relatively unknown among textile chemists. Ammoniated potash is a recognized commercial article used as a fertilizer and is composed of a simple chemical double salt—carbonate of ammonia and potash.

The only materials widely used in bleaching wool are reducing compounds such as sulfur dioxide, hydrosulfite, and related compounds on one hand; and oxidizing materials such as hydrogen peroxide, the permanganates, perborates, and related materials on the other hand. No alkali will bleach wool, although it is useful in cleaning wool preparatory to bleaching; and some bleaching baths are best used on the alkaline side.

This is an interesting subject, and TEXTILE WORLD *will welcome further discussion by readers of Round Table*—Editor.

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Dyeing Nylon

(*Continued from page 119*)

will, therefore, be suitable only for the production of medium or light shades. The neutral dyeing colors have a considerably higher saturation point and may find use in the production of heavy shades, such as bottle greens, navies, and blacks.

A further difficulty encountered in the use of acid colors on nylon is that combinations of acid colors are not adsorbed in proportion to their concentration in the dyebath; and the presence of one color, in small amounts, in a mixture may inhibit the dyeing of one or more colors present in much larger amounts. This selective adsorption proved unpredictable; and, at the present, combinations must be chosen on a trial-and-error basis.

No close parallel appears to exist between the fastness to washing of acid colors on nylon and on wool, but in a majority of cases the fastness of these colors on nylon is appreciably greater than the same colors on wool. Normal wash-test procedures have so little effect on nylon dyed with acid colors that a new washing test involving two consecutive 30-min. washes at 180° F. in the presence of 0.5% soap and 0.2% soda ash was adopted. In many instances, almost complete removal of the color on wool is effected by this washing procedure; whereas, the color on nylon is not affected.

VAT COLORS. In general, the vat colors, when applied to nylon by methods commonly used in the dyeing of cotton or rayon, exhibit indifferent affinity. However, the affinity of nylon for vat colors is considerably improved if the dyeing temperature is raised from the normal 140° to 150° F. to 190° to 212° F. (Sulfoxite C is used as a reducing agent in place of hydrosulfite, which is unstable at this high temperature.) Under these conditions, considerably heavier shades can be produced than are obtained by conventional methods; and these dyeings are considerably faster to crocking and are very fast to washing. However, the fastness to light of these colors as determined by Fade-Ometer tests is particularly disappointing. Recent studies indicate that the vat colors may show a greater resistance to sunlight than is indicated by Fade-Ometer exposure.

AZOIC DYES. By applying the naphthanil and bases individually in consecutive baths, brighter and stronger shades can be obtained than by the older one-bath method for applying the azoic dyes. After impregnating the nylon with naphthanil from an aqueous alkaline bath at

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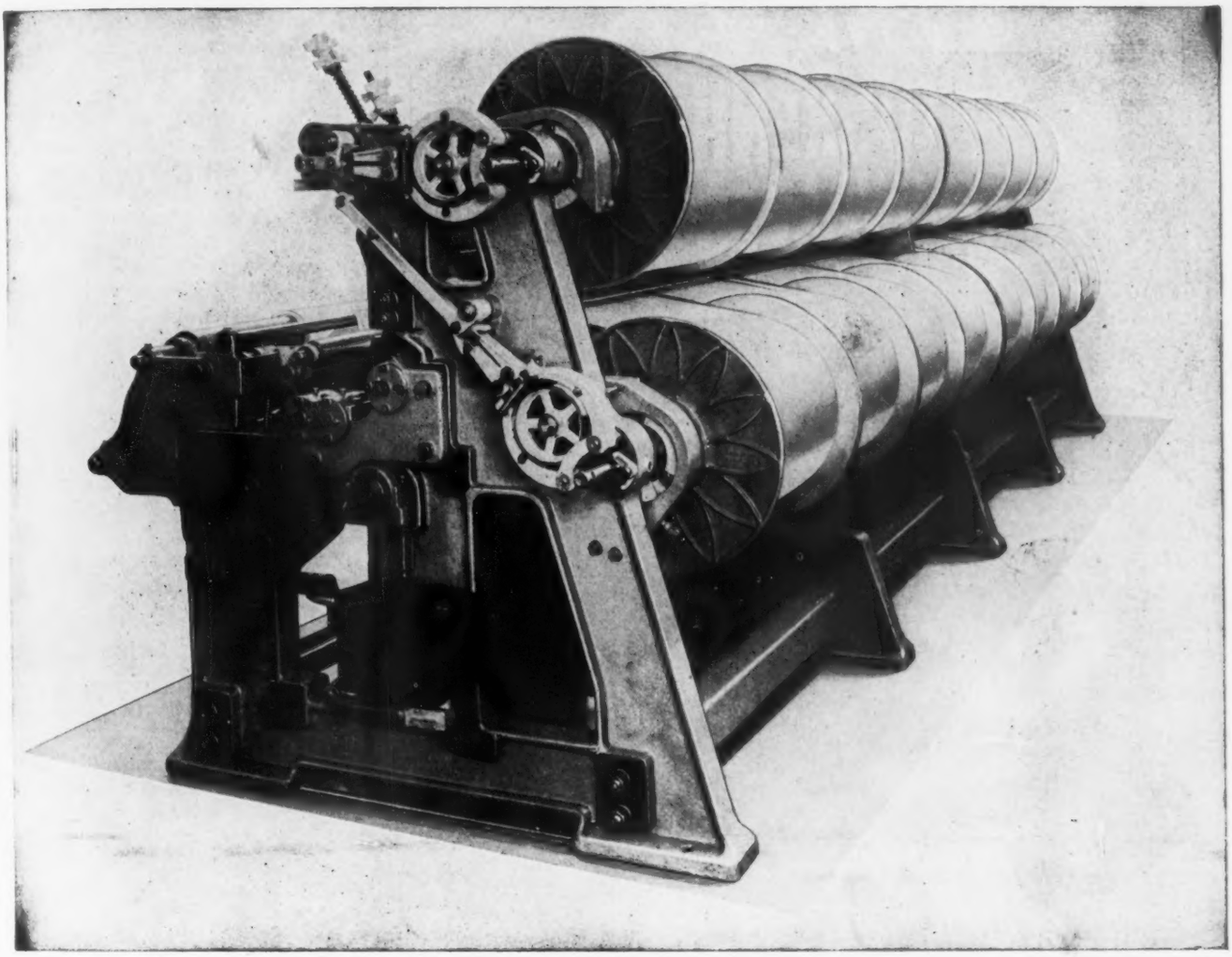

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140° F., the fiber is extracted to remove excess moisture and immersed in a separate bath made acid with hydrochloric acid containing the desired base for 25 to 30 min. at 140° F. Following this, the extracted nylon is developed in a sodium nitrite-acid bath and soaped.

All dyeings of azoic colors on nylon are much yellower or browner in shade than the identical combinations on cotton. Most combinations giving a scarlet shade on cotton dye nylon orange. However, combinations usually producing an orange tend to give redder or browner, not yellower, shades on nylon. The majority of azoic colors appear to have excellent fastness to all color-destroying agents, with the exception of light.

In some instances, the chrome colors may meet an exceptionally high standard of fastness, but the range of shades obtainable with these colors is limited and their application difficult.

Dust and Heat

(Continued from page 113)

VENTILATION EQUIPMENT. American cotton mills usually maintain a dew point of about 67° F. during the cool season, for the sake of manufacturing processes. If the outside wet-bulb temperature approximates this dew point, there is no fuel saving in recirculation; and the ventilation equipment supplies only fresh air. If the outside wet bulb falls below 67° F., enough recirculation is maintained to bring the dew point up to 67° F. At an outside wet-bulb temperature of 32° F., about 14% outside air would be mixed with the room air. The mixed air would pass through the spray humidifier to be saturated at 67° F. and then be heated to the desired dry-bulb temperature. If the air change of the spinning room is about once in 4 min. at a 32° F. wet-bulb outside temperature, there will be a complete change of fresh air once every 28 min. In general, floor space per occupant in cotton mills vastly exceeds that necessary physiologically, so that such an air change is more than ample.

The motors and other machinery generate large amounts of heat. Many mills need supply little heat, even in winter, while in summer the heat in both spinning and weaving rooms can be excessive. A well-designed modern mill with mechanical refrigeration can cope with these high temperatures.

British law prohibits humidification when the wet-bulb temperature reaches 75° F. and requires closing of the mill when it reaches 78° F. Physiologically the law is sound, and a glance at the graph of Fig. 1 will show that such wet-bulb temperatures exceed the upper limits of the human comfort zone. At

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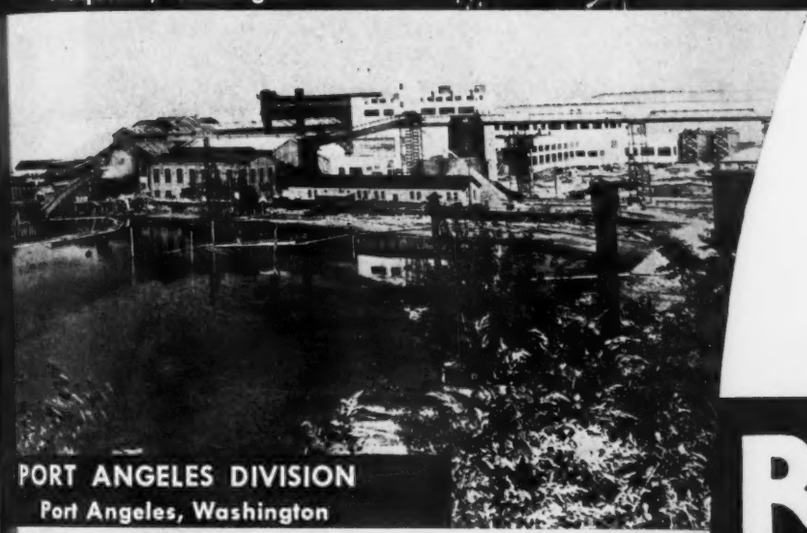

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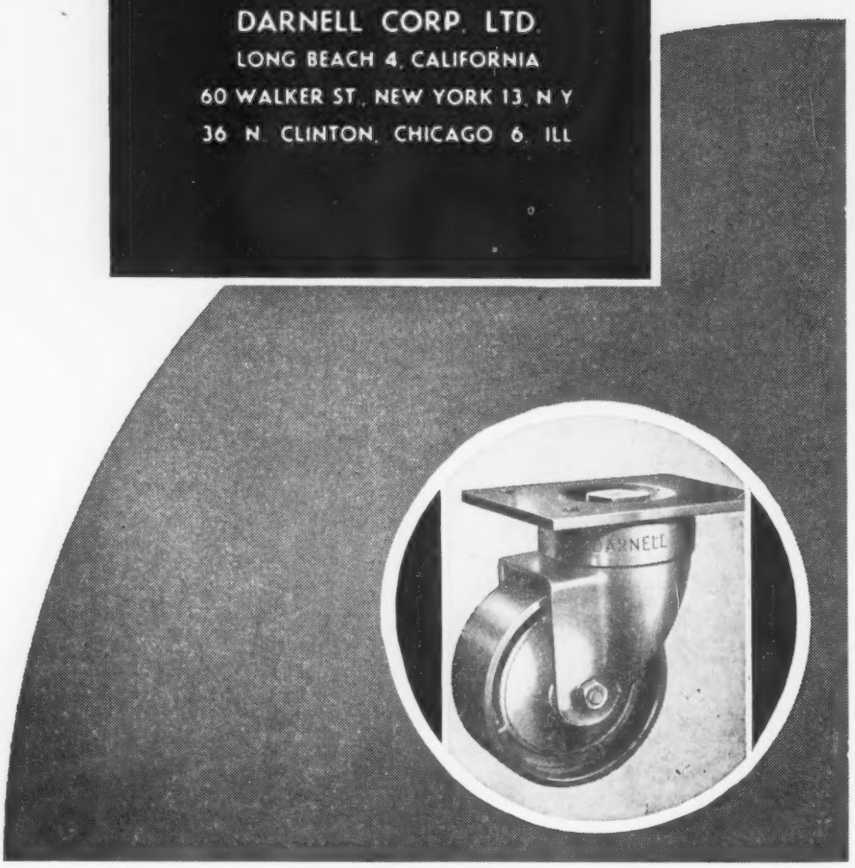

even minimum increase above this zone, human efficiency always decreases.

DUST HOUSES OR DUST COLLECTORS. A modern picker fan discharges about 1,500 to 1,800 cu. ft. of air per min. The velocity up the chimney may exceed 200 linear ft. per min., although lower velocities are recommended. One has only to look at the area near the chimney to be convinced that the dust house is not an efficient dust or lint collector.

It is common practice in dust and fume collection in the mineral industries to measure the pressure drop across the filters and to shake off the accumulated dust cake when the pressure becomes excessive. It is not at all difficult to record such pressure drops and thus to fix a schedule or routine of filter cleaning, so that no undue accumulation of filter cake takes place. It is also common practice in the dusty trades to sample the exhaust air and to determine how much dust it contains. No evidence is apparent in any cotton mill that either of these simple steps are taken—yet they are inexpensive and very practical.

In handling rock dust, linear velocities through the dust filters are about 2 to 6 ft. per min. In the filters of dust respirators worn by workers in some dusty jobs, the filtering velocity is about 15 ft. per min. In filters used for cleaning the air prior to its introduction into an air-conditioned railroad car, the velocity is about 40 ft. per min.

PERFORMANCE OF DUST COLLECTORS. The cleaning efficiency in the examples cited is very high—much higher than one sees today in dust collectors in cotton mills. The main reason for the difference is that the cotton mill cleaners are likely to be grossly overloaded and often are run at 180 ft. per min. and even higher, so that a filter is expected to handle far more linty air than it can. Back pressure is soon built up and the effect is noticed on the lap the picker is producing. This latter point is the one which really interests the operator who states that the criterion of performance is the condition of the lap. To measure the performance of these collectors and to record the results regularly would not be difficult. Such measurement resulted in improving conditions in the mineral industries, and probably would be equally effective in the cotton industry.

AIR WASHER AS AIR CLEANER. The air washer or spray humidifier is reported as not a practical lint collector. It is intended for dew point control, a function it performs very well, but it is not well adapted to collecting continuously lint or cotton dust. It does

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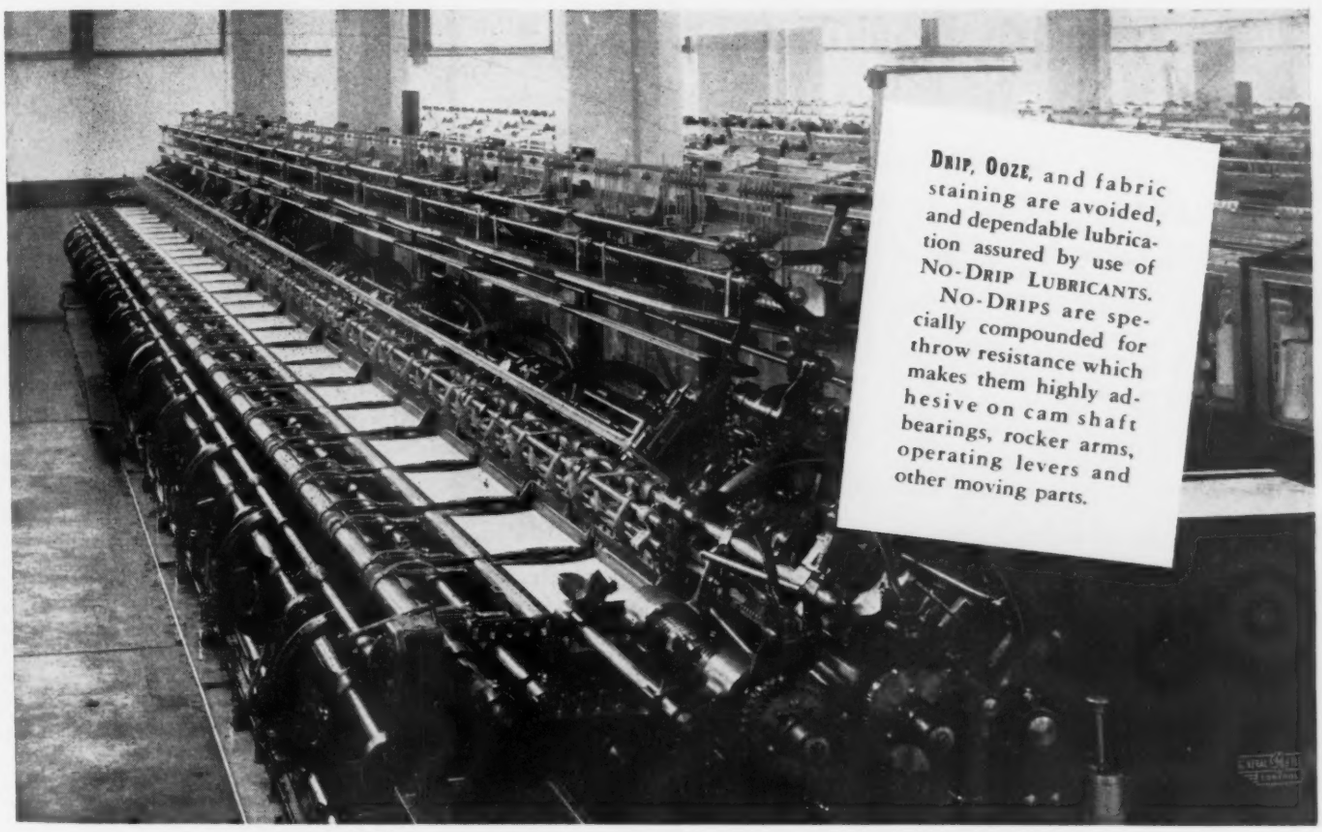
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not matter what grade of cotton is being processed, the screens of the washer, the eliminator plates, and the strainers at the pump intakes show plenty of lint and often get fouled so that they need extra cleaning. In short, the air brought from the mill to the washer should be cleaned of its lint before it goes to the washer. Air washers can be turned into a slovenly mess simply because the operators used them as lint catchers and neglected to clean them.

A number of mills have installed electrostatic precipitators to remove oil or coal smoke from the air supplied, for which purpose they are well adapted. But they are not designed to be lint catchers. The only result from such misuse is the failure of a good piece of equipment to do something for which it was never intended.

COTTON MILL FEVER. Studies by the Public Health Service have shown that the cotton industry is not an unhealthful one, and that it compares favorably with other industries, such as steel. But a minor illness, cotton mill fever, is peculiar to the industry and has been known under a variety of names for years. It is not, however, a serious problem and is wholly preventable by means of dust control. Mill fever is fairly common among workers handling low-grade cotton of all kinds and is caused by a bacterium in or on the cotton dust.

Mill fever is most apt to occur after a holiday—hence the popular name of Monday fever. There seems to be a temporary resistance acquired by one or more attacks which last for a limited time.

It is generally agreed that mill fever is prevented by efficient dust and lint control, and that there is no satisfactory medical or prophylactic treatment.

Twist Fundamentals

(*Continued from page* 99)

The ratio of 8.30 used in the calculation is theoretical, which means that it was figured for a new frame. However, it cannot be far removed from the practical ratio, since without allowance for tape thickness or slippage, the ratio for a $\frac{15}{16}$-in. whorl and an 8-in. cylinder (8 x 16/15) figures 8.53.

MAJOR CONSTANTS. When the spinning room produces yarns of several twists, as is usually the case, or has several models or makes of frames many constants will be in use. Because of the construction details of spinning frames, one particular layout of gears —and one constant—will not suffice for the normal production of yarns. There are limits to the size of twist gear

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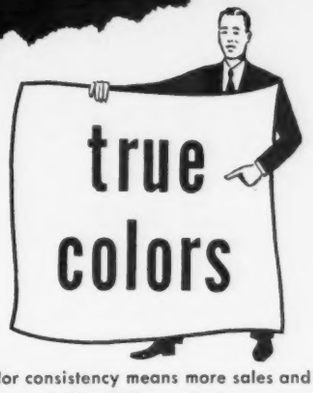

Color consistency means more sales and bigger profits. Delicate shades are not affected by chemical reaction. No "corrections" are needed. There is no danger of off-colors.

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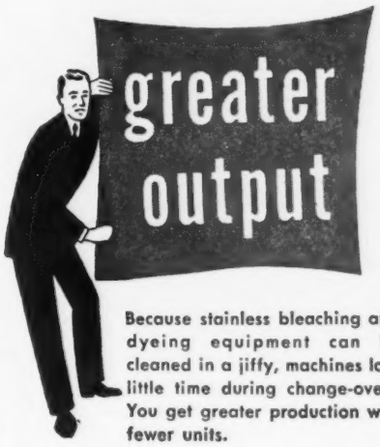

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T.W. 46 (No Solicitors Will Call)

that will fit in the chain of gears; and if a yarn out of the normal range of twist is put on the frame, the constant must be changed. Therefore, many overseers prepare major twist constants, keep complete twist records, and use various forms of twist-conversion charts.

If the jack gear or cylinder gear must be changed in order to obtain the desired t.p.i., thus changing the twist constant, a new constant can be calculated in one of three ways.

1. The new gears may be inserted in the calculation and the entire calculation refigured.

2. The constant may be converted to a major constant by omitting the jack gear and the cylinder gear. The major constant multiplied by the jack gear and divided by the cylinder gear equals the twist constant, as,

$$\frac{264.2 \times 132 \text{ j.g.}}{26 \text{ c.g.}} = 1341 \text{ twist constant.}$$

To find the new constant when the jack gear is changed from 132 to 92 teeth, the calculation is

$$\frac{264.2 \times 92 \text{ j.g.}}{26 \text{ c.g.}} = 934.$$

3. Proportion can also be used to calculate changes resulting from an increase or decrease in the number of teeth in the jack or cylinder gear, as:

$$\frac{1341 \times 92}{132} = 934 \text{ twist constant.}$$

Special Filling Bobbins

(*Continued from page 127*)

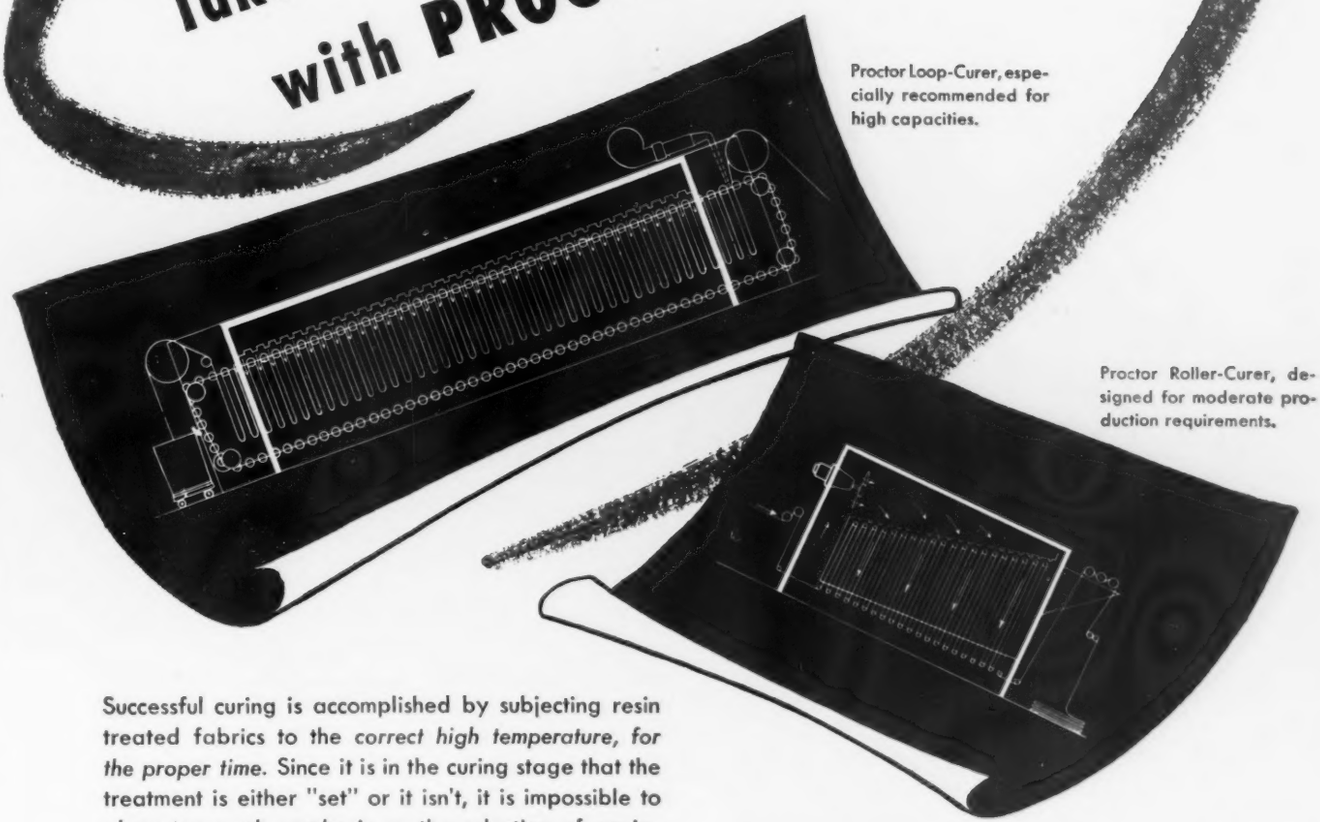
something must give. Usually, if the barrels are well constructed from seasoned stock, the crushing action, in place of splitering the wood, will cause the barrel to warp as much as half an inch off center.

If badly warped bobbins are placed in the loom magazine, a miss often occurs. It may happen at the moment the transfer hammer strikes the rings that the nose of the bobbin is warped upward and a knock-out may occur. Even if the transfer is satisfactory, the warped nose may strike the side, be too high, too low, or cause filling breakage at the transfer.

Consider the price of damaged bobbins from the angle of lost time. How many minutes will a loom be down when the filling breaks? How much production will be lost? From the foregoing, the price of bobbins must be figured—but rarely is. Unwoven yardage cannot be regained. The few cents that were the original cost per bobbin has doubled and keeps on increasing every time a filling break occurs.

On hand-change looms, warped bobbins can often be run off in the loom, providing the nose is not too far out of center. However, cloth woven is subjected to barré due to the uneven flow

Take the guesswork out of curing with PROCTOR EQUIPMENT



Proctor Loop-Curer, especially recommended for high capacities.

Proctor Roller-Curer, designed for moderate production requirements.

Successful curing is accomplished by subjecting resin treated fabrics to the *correct high temperature, for the proper time.* Since it is in the curing stage that the treatment is either "set" or it isn't, it is impossible to place too much emphasis on the selection of equipment for curing.

UNIFORM TEMPERATURES . . .

Absolutely uniform temperature is required throughout the entire machine for proper curing. Not only that, but proper circulation of heated air is a vital factor. It must be such that not only is the temperature uniformly maintained, but must provide for a proper relative exhaust of air from within the curing chamber.

ACCURATE CONTROL . . .

It is obvious, then, that all factors affecting temperatures, humidity, and circulation must be carefully controlled. The time that goods are in the curer is another factor which must be controlled to the split second, if curing is to be properly accomplished.

DESIGNED FOR INDIVIDUAL PROBLEM . . .

In curing there is no room for guesswork. That's why it pays to specify Proctor equipment. Each Proctor machine, built for curing, is engineered to meet the requirements of the individual curing problem. Every factor is carefully considered and the machine is designed accordingly. Be sure of your cure. Use the Proctor machine designed and built for you. Write us about your problem today.

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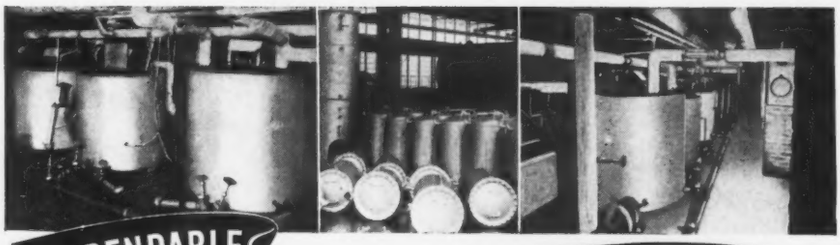

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Long and wide experience in the design and fabrication of bleaching kiers, starch kettles, and vats and vessels of all types for the textile industry, enables us to offer you *superior service* on these products.

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Submit your problems to our Engineering department—or write for a copy of "Tank Talk."

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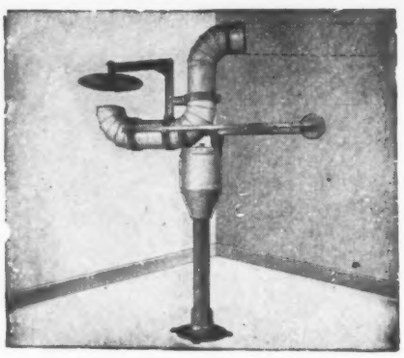
Thorough Blending of Synthetic Fibers



TRUSLOW* BLENDER (patented)

Really thorough blending of spun rayon, wool and cotton with fibers of other raw materials is becoming increasingly important.

The Improved New Model Truslow Blender has been developed to provide thorough blending of almost all types of natural or synthetic fibers. The stock is blown through piping to the Blender. It then passes through a rotating arm and is blown up against the vanes of the canopy—making it revolve and distribute the stock in the form of a heavy snowstorm.

* Reg. U.S. Pat. Off.

Curtis & Marble MACHINE COMPANY WORCESTER, MASSACHUSETTS

of yarn as it passes over the bobbin nose. Here is a frequent source of defective cloth. A question that must be settled by individual mills is whether barré is less costly than rewinding warped bobbins.

HIGH WINDING COSTS. Do not overlook the cost to the filling-winding department when defective or poorly designed bobbins are used. When handling the strong yarns mentioned, bobbin barrels often contract onto the winder spindles and are difficult to remove. Quite often, these tight bobbins even resist the efforts of male employees who are much stronger than the female employees usually doing the winding. If the operator is unable to remove a tight bobbin from the spindle, she must notify the winder-fixer or some other employee. This requires time, and in the meantime the idle spindle is losing production until the tight bobbin has been removed. Here again the bobbin has increased its cost, but the increase is not so great as when yarn is damaged or looms are idle.

Generally when removing tight bobbins, the outer surface of the yarn becomes greasy and soiled. If these bobbins of yarn are sent into the weave room, the cloth becomes soiled, and, at times, must be placed in a substandard classifiication. The pieces woven can be assumed to sell for several cents per yard under firsts. Figure the loss at several dollars per piece, and add this to the cost of bobbins.

But the foregoing is a minor item in cost when compared with time lost during loom shutdowns. The dirtied yarn will often be chafed and will break. If the weaver is at the far side of her section, it may be many minutes before the loom is restarted. Often the weaver is under the impression that the breaks may require a fixer, and the fixer is flagged. Perhaps before he has time to investigate the trouble, another half hour may pass.

SPLINTERS AND CRACKS. Occasionally, warped bobbins are sent back to the winders for refilling. At times, the fixers may endeavor to ream the barrel larger. Reaming will thin the wall section and cause the eventual splitting of the barrel. As a result, splinters will work free or the finish will crack. On subsequent run-offs in the loom, filling yarn hangs on to the slivers or chipped surface. The result is chafed yarn throughout the piece of cloth. If the filling breaks, the result is usually not quite so serious. But many times when filling does break, inexperienced weavers will restart the shuttle and keep on trying to run the yarn off. The result is a run of shirers, shiners, and other cloth defects. Even under otherwise ideal conditions, no weave-room can be effi-

In the picture ☆

When it comes to knitted undergarments, Union Special Class 52800 machines are very much in today's picture. Plants equipped with these modern, precision-built machines enjoy big advantages in quality of work produced . . . high output rates . . . . freedom from maintenance troubles. Put the FIFTY-TWO-EIGHT in your production picture!

• *Union Special Class 52800 machines are enclosed type, flat bed, four and five thread interlock machines, making Stitch Types 602 and 605. Special styles for attaching knitted tubing, binding, cuffs and collarettes on all types of knitted undergarments.*

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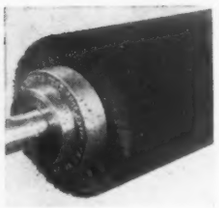

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cient when bad bobbins are coming through to the loom. It is better to discard slightly damaged bobbins as soon as they are detected.

The price of bobbins is what supervisors make it. When supervisors are careless, the price of bobbins is impossible to estimate.

Rayon on Woolen System

(*Continued from page* 101)

is easier to card hence less oil. But short staple is more difficult to condense, and there is liable to be excessive fly. Therefore, the increased emulsion aids in the condensing and tends to cut down fly.

For deniers finer than 3.0 and staple longer than 2½ in., an increased percentage of oil would be helpful, but this is impossible due to the formation of laps on the dividing rolls. It was found that with the 60-oil/40-water emulsion present, any amount of straight oil in excess of 3% causes the stock to lap. However, we feel it safe to say that in the case of ring doffers, a higher percentage of oil could be used effectively. In brief, procedure is as given in Table I.

When 50% wool/50% staple blends are used, the percentage of straight oil is figured on the weight of the rayon only. In this case, Table I still applies, but the percentage of straight oil mentioned should be doubled. Also, the amount of emulsion should be figured on the basis of 9 qt. per 100 lb. of wool. Here it must be remembered that the emulsion applied to the wool is 60% water and 40% oil—the exact opposite of that applied to the rayon.

The application of straight oil to the rayon has several good points:

1. Allows a higher percentage of oil, with minimum of water, than would otherwise be possible.
2. Provides protection for the rayon against the water content of the emulsion.
3. Allows two-process lubrication which insures better distribution of emulsion.
4. Produces a better spin and evener yarn.

In explanation of item 4, the natural affinity of rayon for twist and the fact that water causes this twist to set more rapidly, is the basis for much difficulty in spinning even yarn. The straight oil allows the rayon fibers to slip past each other, hence more even draft and finally more even yarn.

Although we are obtaining satisfactory results using the lubricating techniques described, we believe there is still room for improvement in this very important phase of processing. The

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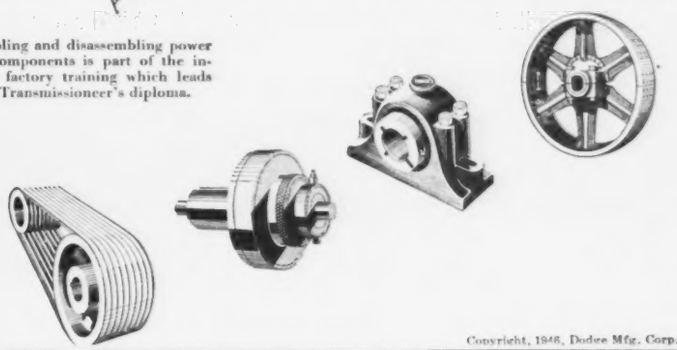

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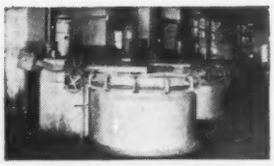
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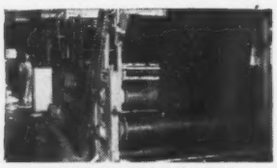
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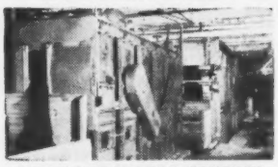
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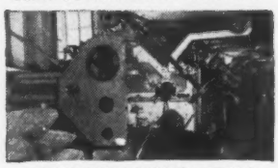
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To All of Our Old Friends:

It has been our pleasure and privilege to see some of you occasionally, even in these busy days, for which many thanks.

Whether we have seen you lately or not, we are thinking about you, planning to serve you and, most of all, wishing you and yours success, and A Happy New Year.

DRAPER SOAP CO.

DIVISION OF CONTI PRODUCTS CORP.

171 Front St. Tel. No. Perry 1806 Pawtucket, R. I.

work we have already done on this subject indicates to us that there may be much room for experimentation of oiling techniques for all textile fibers.

PICKING. As rayon is a synthetic fiber, it contains no objectional foreign matter, thus eliminating the need for dusting, burr picking, and scouring. It is shipped perfectly clean and in a fairly open state and therefore in the picking operation only a very moderate opening is necessary. A regular woolen picker, it is believed, is too severe for rayon staple. Best results are obtained from an opener built especially for rayon. One of these that has performed very well is shown in Fig. 1, and has the following specifications:

There is a full cylinder 36 in. wide and 26 in. in diameter with 11 lags spaced 3½ in. apart, each lag having 6 rows of 23 pins each. These are smooth, round, straight pins 3/16 in. in diameter at the base, ⅞ in. long, with a taper to a sharp point starting ¼ in. from the base, as shown in Fig. 2. The cylinder runs at a speed of 900 r.p.m. against a grid which has six angle irons. The first is 1⅛ in. high and each succeeding one ⅛-in. shorter, making the last angle iron ½-in. high. There is one pair of fluted feed rolls, the speed of which can be varied from 5 to 34 r.p.m. so as to obtain different degrees of opening.

Though rayon requires only moderate opening, the importance of this operation is not lessened. It should:

1. Eliminate lumps to insure an even feed over the spike apron of the card.
2. Provide good distribution of fibers and emulsion (important for good carding and spinning).
3. Make stock loftier for better blending and card feeding.

In order to obtain the best opening specifications that would combine the highest possible production with a minimum of staple breakdown and provide a suitable amount of opening of the stock before carding, a series of seven tests were worked out varying these specifications in such a manner as to give a true test. Starting with open settings and the highest possible production, the settings were gradually closed and production lowered until that point was reached where sufficient opening was obtained. Further maneuvering of settings was made until there was a minimum of staple breakdown. Then the maximum production under the aforementioned conditions was ascertained.

The data contained in Table II covers production results obtained with various settings.

From visual examination, it was ascertained that the best opening was obtained with the conditions as described under test No. 4. Tests Nos. 5, 6, and

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Star's purity permits high dilutions without breaking. Thus you avoid the build-up of a rough scale on the J box, which forms when less pure silicates are used and which must be scoured off by hand to avoid rejects.

Ask for a sample of Star Brand. Examine it. Test it.

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7 were next in line. Tests Nos. 1, 2, and 3 did not compare favorably with those previously cited.

According to staple diagrams made of the rayon picked under each of the precited conditions, the following classification on the fiber breakdown, was arrived at:

Picker Test	Grading
1	7
2	5
3	4
4	1
5	2
6	3
7	6

From the fiber breakdown point of view, test No. 4 is the one giving the most desirable results.

Several staple lengths of various deniers and of both bright and dull description were put through the opener according to the conditions as described in test No. 4. The results were recorded in Table III.

All of these tests were run using no lubrication on the staple so as to accentuate the breakdown for comparison purposes. The percentage of breakdown would be considerably less if the staple were oiled.

Tests have shown that there is some staple breakdown and some formation of neps during the picking operation, but on the other hand there is a greater staple breakdown during carding and a decrease of up to 50% in carding production, when stock is fed directly to the card, omitting opening.

Second in a series of articles on how to run staple rayon on the woolen system, this installment covers the use of emulsions on rayon and on wool, and the opening operation. The first of the series appeared in the December issue of TEXTILE WORLD, covering selection of staple rayon for blending with various wool grades.

AATCC Meeting

(*Continued from page 131*)

cluded that differences in physical properties discussed are simply and solely due to zoning.

"The strength of the wool fabric is not affected materially by the treatments both warp and fillingwise. In the case of cotton and rayon the on treatments diminish the elongation more than do the in treatments; hence, the on strengths are lower than the in strengths independent of any chemical tendering.

"The resin treatment has a negligible effect on the elongation of wool. With cotton and rayon, the on treatments diminish the elongation more than do the in treatments.

"For the various fabrics, the thickness of the on is significantly greater than

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Under development since before the war the new Robaczynski two bar, 26 and 28 gage Tricot machine is so constructed it will withstand speeds in excess of 500 courses per minute in a 180 inch width. It will accommodate a 21-inch beam or any other standard size.

This high speed versatile machine was designed by L. Robaczynski with the assistance of experienced Tricot associates. It is built in our modern plant in Brooklyn where for over 35 years we have been building knitting machinery. This Tricot machine has novel features and improvements unlike any other Tricot warp knitting machine.

A big producer over a long and carefree life for owner and operator may be expected of it. It can be seen now, by appointment, in our new show room at the plant.

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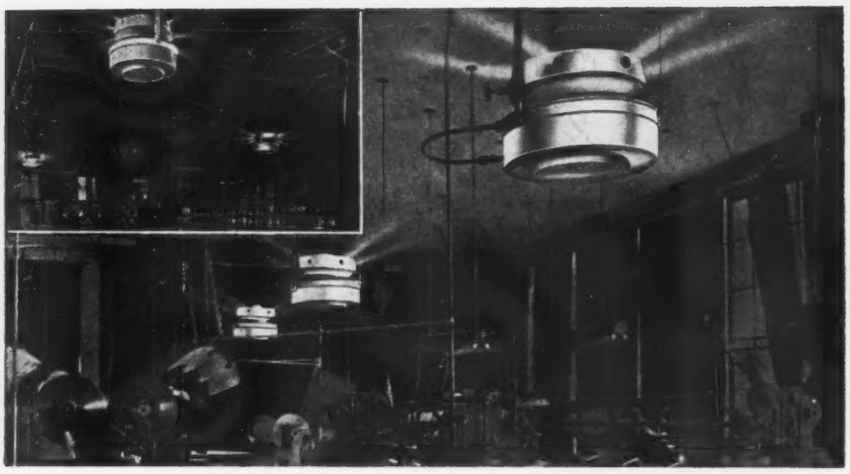

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the control. For the wool, the in is significantly thicker than the control, while in the case of the rayon and cotton, the control and the in show no significant differences.

"There is no significant difference between the control and the in for wool, cotton, or rayon, while the on treatment yields a significant reduction in air permeability in every case. The on and in are significantly different for the three fabrics.

"The melamine resin is more rigid than wool or cellulose, and stiffer fabrics would be expected when applied either in or on. In the in samples, the resin is distributed in discrete particles, and some increase in stiffness results. For the on fabrics, the resin consists of a continuous exterior sheath; here, it acts as a structural unit and greatly increases the stiffness.

"In the case of the wool, both the in and the on treatments show an improvement over the control as regards compressional resilience, the in being preferred. The poorer original resilience properties of the cotton and rayon are not so greatly improved as are the better original resilience properties of the wool.

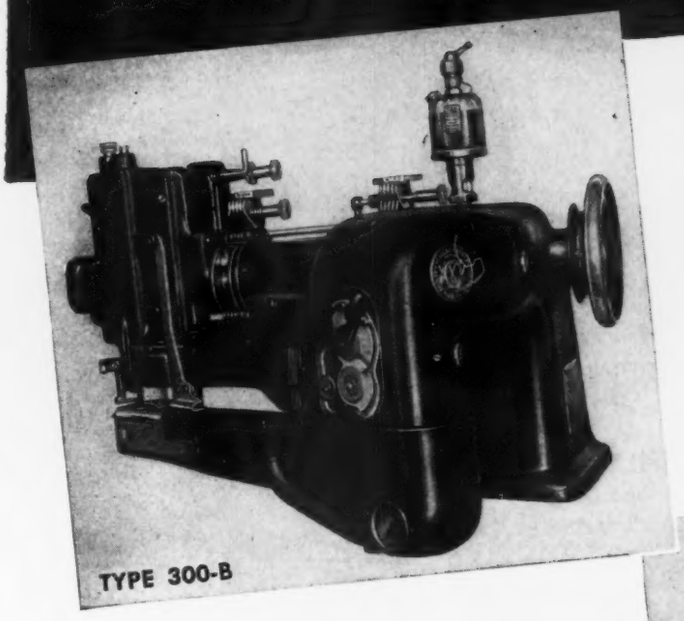
"Application of resin, either in or on, to the wool, cotton, or rayon does not make these fabrics better inherent insulators. Application does make them thicker, and because they are thicker, their total insulation ability increases.

"For the wool, both on and in treatments appreciably reduce shrinkage—the on showing great improvement. In the case of the cotton, the control does not shrink appreciably; hence, neither the in or on treatment has an opportunity to be effective. For the rayon, the on shows some improvement; the in gives excellent results."

NYLON AND HEAT. Some of the effects of dry heat on the properties of nylon fabrics were described by Arthur W. Etchells, for the Philadelphia Section, as follows:

"Nylon fabrics can be greatly improved in handle and appearance by heat treating. These heat-treated fabrics are softer, more mellow, and have a finished appearance not apparent in untreated materials. Heat treating also renders the fabric more resistant to dimensional changes, and helps to overcome the tendency to crease when washed or submitted to other wet treatments. Proper heat-treated nylon fabrics may be dyed in rope form at elevated temperatures without developing crow's feet or dye creases, which are unavoidable in untreated fabrics. Pieces set at high temperatures are also more resistant to creasing when dry, and, if creased, quickly recover to the normal

THEY ARE DEPENDABLE-



TYPE 300-B

Record highs in product volume and new lows in operating costs are being consistently maintained by many garment manufacturers using Willcox & Gibbs equipment. The reason for this is obvious. For down through the years Willcox & Gibbs has steadfastly held to the principle that only precision workmanship and the use of the finest materials in the design, manufacture and application of sewing machines and parts, can make such records possible.

TYPE 300-B—The "Flatlock" is designed for flat seaming operations on light and heavy ribbed underwear, rayon and silk lingerie, and similar articles. The "Flatlock Seam" is perfectly flat. It is a perfect union of abutted edges, presenting but one thickness of cloth to the body of the wearer.

Improved features include increased working space; semi-automatic lubrication; self-setting needles; accessibility for cleaning and adjustment. Stitch type 606.

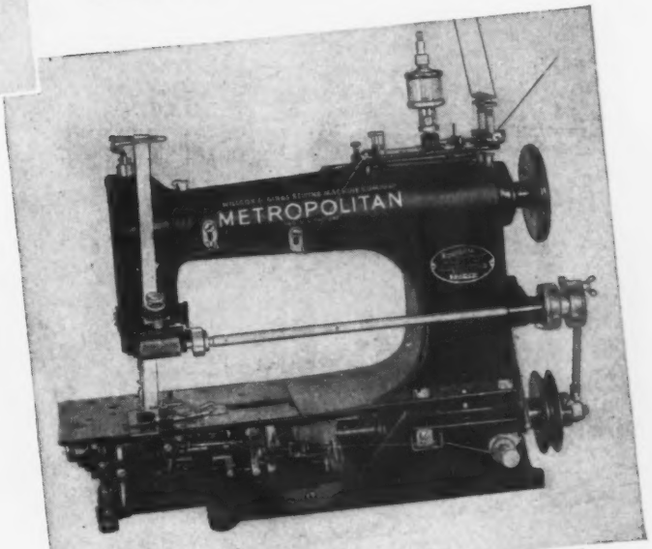
STYLE 950-CWS—The Elastic Attaching Machine is used for sewing belts of flat or frill elastic to rayon, silk, cotton and wool undergarments, athletic shorts, etc. A Perfect Stretch Elastic Tension Device, built into the machine, prevents slipping and creeping of the elastic and ensures uniform size to each garment.

Other features include semi-automatic lubrication; perfect balance; floating power; and conveniently located looper and needle thread control. Stitch Type 406.

STYLE 951-ACFZ—For two-needle simultaneous seaming, trimming, binding and gathering on ladies' and children's dresses, smocks, uniforms, pajamas, housecoats—flounces on slip covers; and for sleeve-setting on blouses.

The amount of fullness in the gathering process can be adjusted to suit particular manufacturing requirements.

Special features include floating power; semi-automatic lubrication; detachable shear trimmer; looper and thread control. Stitch type 401.



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uncreased state when allowed to relax. A further advantage of heat treating nylon fabrics is that many of the strains accumulated in the manufacturing of the fabric are equalized and thus a more satisfactory piece of material is produced. It has been observed that heat-treated nylon fabrics do not always show the same dye affinity that is shown by untreated nylon, and it is well known that nylon can be severely damaged by heat.

"With these advantages and disadvantages in mind, a study was undertaken in order to determine the best operating conditions for securing the maximum number of advantages with the least amount of damage to the nylon, and also to determine the effect of heat treating upon the dyeing properties of the fiber.

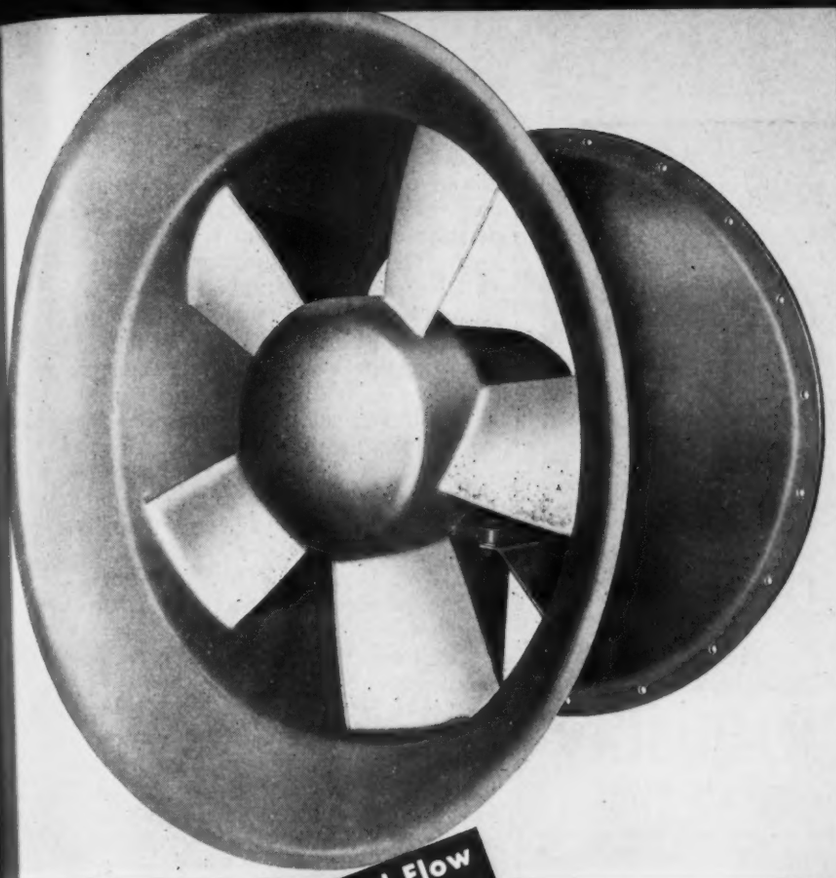
"The first trial was made by passing measured pieces of nylon parachute fabric over an electrically-heated revolving cylinder, varying the temperature through the range of 335° to 470° F., but maintaining a constant contact time of 2½ sec. during the treatment. The filling, which was under little tension in processing, showed a loss in width at 470° F. of 1½ in., with no creep back to the original width of 37 in. Goods treated at 445° F. also showed a permanent fixation. At lower temperatures, the goods showed a uniform tendency to return to the original dimensions, although in no case did the fabric return to the original width. The warp, which was held under tension, showed practically no variation in length. The greatest loss in strength of the filling occurred between 435° and 470° F. The warp showed little loss in strength throughout the range of temperatures used. Filling elongation was not seriously affected by temperatures up to 445° F. Over that temperature there is a distinct loss.

"All these tests indicate that nylon fabrics may be exposed to dry heat at temperatures of 335° to 440° F. for 2½ sec. without serious damage to the nylon. Higher temperatures of treatment cause rapid degradation of the fiber.

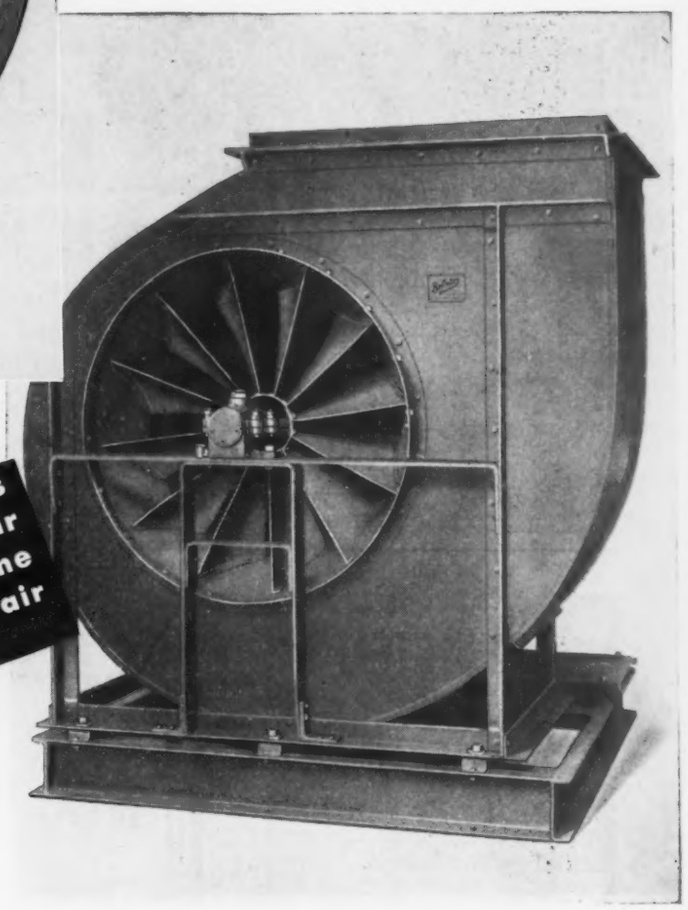
"The second test was made to show the effect of operating at the highest safe temperature (440° to 450° F.) and varying the time of contact. Contact times used were 2½, 3½, 4½, 6, 8, 11, and 13 sec. There was practically no warp shrinkage, whereas the filling showed nearly maximum shrinkage at the shortest exposure time, with little change thereafter. Both warp and filling showed a constant reduction in strength as time of contact increased. There was also a consistent loss in elongation of the warp with increased contact time.

Dyeing trials were made using ½ of

Each has its place



top — Buffalo Axial Flow Fans are available in a complete range of sizes, direct connected and belt driven.



bottom — Buffalo "LL" Fans are for ventilating, air conditioning and some types of industrial air handling.

• When you select a fan for ventilating, cooling, exhausting, or, in fact, any commercial or industrial service, by all means pick the fan which will give the best performance on THAT particular job.

The relatively new axial flow fan meets many special installation requirements; it is ideal for some of these.

It should not, however, replace the centrifugal fan for many other installations.

A safe general rule to follow is this: Axials are satisfactory for low pressure service in air conditioning, ventilating, quick-freezing processes and some industrial work.

Where duct systems require elbows or bad connections near the fan inlet or outlet, or where pressures above 5" or 6" static are encountered, or where heavily dust-laden air is handled, a centrifugal fan will usually give better performance.

Buffalo builds both Axial Flow and Centrifugal Fans. Buffalo Sales Representatives located in principal cities, are thus free to recommend the type and style which will give you most efficient service.

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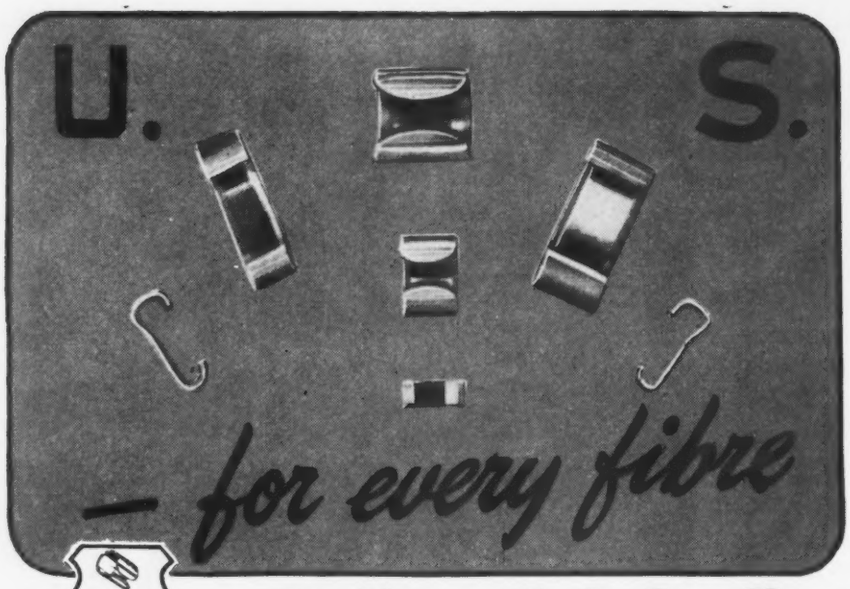

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1% at 185° F. for 1 hour. These dyeing tests showed that heat-treated nylon fabrics can be dyed without forming creases in the fabric, provided the temperature of pre-treatment is sufficiently high. They showed also that some dyestuffs dye heat-damaged nylon to a greater depth than undamaged nylon (and consequently could be used in determining the amount of heat damage in a given sample), whereas other dyes show a loss in color value with increasing temperature of pretreatment."

AGGLOMERATION OF DYE. Factors which cause or prevent agglomeration of pigment particles were analyzed by Raymond W. Jacoby, of Ciba Co., Inc., for the Rhode Island Section, in part as follows:

"Agglomeration of pigment particles can cause a substantial loss in color yield in vat-color printing. Inasmuch as coloring materials in pigment form are used extensively not only in vat-color printing, but in many other ways, it was thought that a study to determine what factors or properties cause or prevent this agglomeration would be of material value. The phenomena studied can be classified under the following four headings: (1) Electrical charge on color particles. (2) Hydration of color particles. (3) Nature of the colloidal dispersion of the thickener. (4) Effects of finely divided solids.

"In order to eliminate variables due to different types of pigment dispersion, all of the experiments were made with the same vat-color paste, namely Ciba Blue 2BDG Double Paste, C. I. 1184. The presence or absence of agglomeration was determined by microscopic examination of dispersions of the pigment in various media, and by making prints on cloth.

"It has been found that all vat pastes tested carry a negative charge, and it was assumed that the introduction of an electrolyte carrying a positive charge would cause agglomeration.

"Since vat-color pastes are water dispersions, and the pigment particles are considered to be hydrophilic, it would be expected that the addition of substances having strong affinity for water would weaken the water envelope surrounding the pigment particles, and thereby promote agglomeration.

"In confirmation of these ideas, it was found that anhydrous ethyl alcohol or silica-gel when added directly to the vat color paste caused agglomeration. If these materials are first added to another aqueous phase so that they become hydrated and vat color paste is then added to the mixture, no agglomeration occurs.

"It has been established that if solid particles of various size are mixed, the smaller particles tend to coat the larger

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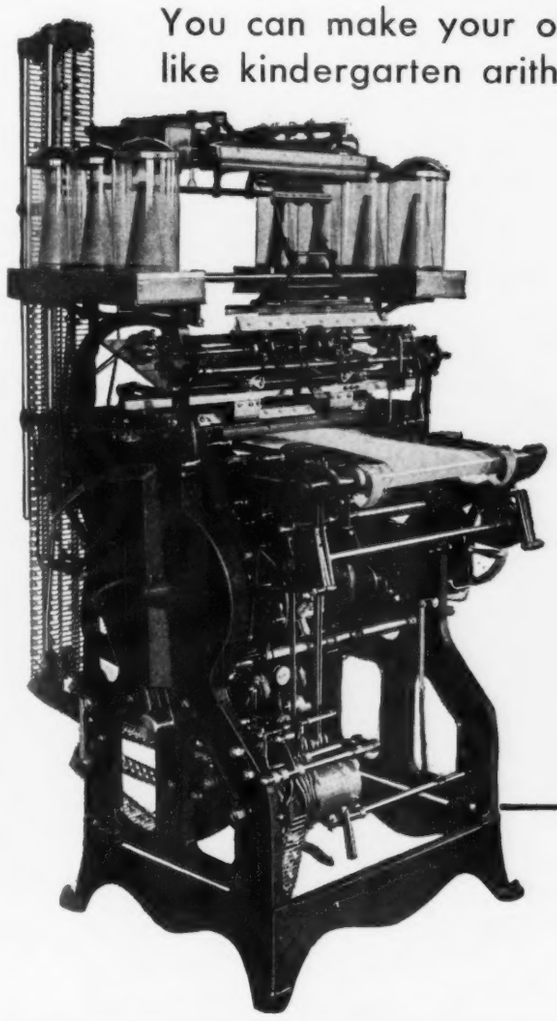

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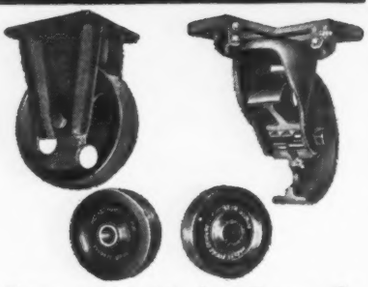

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particles. It was thought that this action could be utilized by adding fine particles of insoluble material to the vat-color paste. Then, depending upon the size of the color particles and of the particles of the added material, one would coat the other and prevent the color particles from agglomerating and adhering to each other. As there are on the market a number of insoluble and relatively inert pigments of fine particle size, it was decided to experiment with them. Examples are: silica, diatomaceous earth, aluminum oxide, silica gel, bentonite, Syton (colloidal silica), calcium sulphate, and calcined calcium sulphate. All of these materials with the exception of the calcium sulphate, when added to the starch-British-gum paste improved the dispersion.

"From a practical standpoint these studies show that in the use of pigments, microscopic examination should be made to see if any agglomeration exists. If there is no evidence of any, or only slight traces, the dispersions might be improved by addition of finely divided particles of inerts, care being taken to see that such addition does not introduce harmful factors such as particles which would scratch a print roller.

"If serious agglomeration exists, this work indicates that there are at least three factors which have been shown to cause agglomeration and investigation should be made to see if they exist and have caused agglomeration. They are: (1) presence of electrolytes which affect the electrical charge on the pigment particle; (2) presence of materials which affect the degree of hydration of the color particles; (3) the nature of the colloidal dispersion of the vehicle.

Knit Work Socks

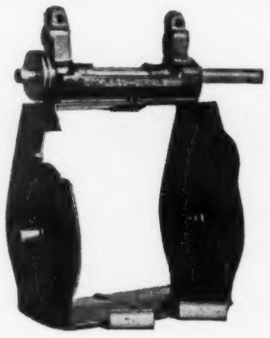
(*Continued from page 105*)

Winding the yarn from the spinning bobbins to cones or tubes is done on a Foster Model 102 winder, after which it is placed in a steam-conditioning room and allowed to remain for at least 8 hr. This conditioning period raises the moisture content to 4½ to 5%. Upon removal from the steam room, the cones are packed in cardboard containers and stored until needed by the knitting room.

Knitting operators each tend 20 of the automatic Scott & Williams machines, and the average production of each machine is 5 doz. pairs; thus, the average daily production per operator is 100 doz. pairs.

After knitting, the unlooped socks are inspected for defects. The toes are then closed on a 12-point looper, and the socks are inspected again.

Preparatory to boarding, the work



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HOOKER RESEARCH *Presents*

LAURYL PYRIDINIUM CHLORIDE

$C_5H_5N(C_{12.6}H_{26.2})Cl$

This recently developed product of the Hooker Laboratories has already made its mark in many different applications. The textile field has put Lauryl Pyridinium Chloride to work cleaning textile fibers, in water soluble lubricants, wetting agent in processing, color modifier in dyeing and as a cationic detergent, dispersing and wetting agent in rayon manufacture (Ref. U. S. Pat. No. 2,125,031). Like other quaternary ammonium compounds this chemical has good germicidal properties and is quite potent against both Gram-positive and Gram-negative micro-organisms. For the pharmaceutical industry, this chemical has many interesting possibilities in the preparation of antiseptic soaps, germicides, disinfectants, fungicides, insecticides, etc.

Among other suggested uses for this compound are the manufacture of foam resistant compounds, leveling agent in polishes and waxes; lubricant for plastic molds, additive to water to increase solubility of many organic compounds. Technical Data Sheet 745 gives physical and chemical characteristics and other information. A copy will be sent you on request.

Aluminum Chloride, Anhydrous, $AlCl_3$ is principally used as a catalyst for Friedel-Crafts synthesis, polymerization, isomerization, halogenation. These reactions are important in the production of high octane gasoline, lubricants, synthetic rubber, dyes, pharmaceuticals, photographic chemicals, etc. Hooker Aluminum Chloride is a grayish crystalline solid which fumes in moist air. It is available in three sizes. It is a particularly pure product containing a minimum by weight of 99% aluminum chloride and a maximum iron content of .05%.

Antimony Trichloride, Anhydrous, $SbCl_3$ is used in the petroleum industry as a catalyst (with $AlCl_3$) to convert normal butane to isobutane and in various hydrocarbon oil treatments. It is also used as a catalyst in organic synthesis; in the manufacture of dyes and pharmaceuticals; preparation of antimony salts; as a mordant in calico printing; in antimony plating; in bronzing iron and other metal treating processes. In a muriatic acid solution it forms a coating of antimony on iron retarding corrosion. Hooker Antimony Trichloride, Anhydrous, is a yellowish crystalline solid of 99% minimum purity. Iron and arsenic are present in a maximum amount of 1% and it is entirely free from lead.

Arsenic Trichloride, Anhydrous, $AsCl_3$ is used in the manufacture of synthetic organic chemicals containing arsenic for insecticides, war and police gases. The Hooker product is a clear, colorless to pale yellow liquid, containing 99.5% minimum, arsenic trichloride.

Ferric Chloride Solution, $FeCl_3$ is used in sewage treatment, in photo engraving, for photogravure and heliogravure, as mordant in dyeing and printing textiles, for the manufacture of other iron salts, paint pigments, iron pharmaceuticals, as an oxidizing agent in making dyes, as a general disinfectant. It is a dark orange-red syrupy liquid with a Ferric Chloride content of 40 to 45% and a ferrous chloride content of .20% maximum.

Help from Hooker Technical Staff

An important function of the Hooker Technical Staff is to cooperate with users and prospective users of Hooker Chemicals. On any of your problems involving chemicals, let our Technical Staff help you in determining where Hooker Chemicals can provide the answer.

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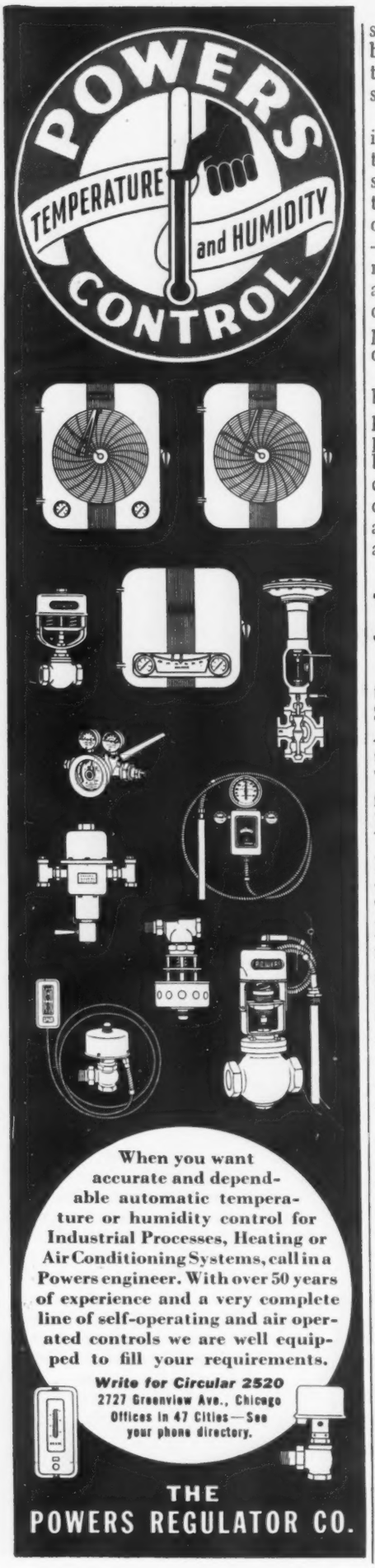
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socks are wet by immersion in a water bath and extracted in a low-capacity centrifugal extractor. Boarding is done on steam-heated metal forms.

The final inspection, pairing and folding are done by hand at the folder's table. Paper riders which carry the size schedule of the socks and the customer's name, if desired, are pasted over the tops of each pair. Transfers —giving the company's or customer's name, the construction (2 or 3 thread) and size of the socks, and a description of the fiber content—are printed on paper and transferred to the toe, sole, or heel.

For shipping, the socks are put in bundles of a dozen pairs each and pieces of chip board (cardboard) are placed on the top and bottom of each bundle. The bundle is tied by a machine, after which it is placed in a cardboard carton. The cartons are sealed and fastened with steel strapping by another machine.

Textile Group to Govern Japan's Textile Industry

The group of textile experts, which is to be attached to the Economic & Scientific Division of General MacArthur's headquarters in Japan, expects to leave for the Far East about Feb. 1. The group will be responsible for formulation of operating policies for the Japanese textile industry.

Lee Fleming, formerly of Marshall Field & Co., will head the group. Others who will accompany him include James Torrens, assistant director of the Textile Branch of the Civilian Production Administration, and Hiram Nones, textile specialist for the Bureau of Foreign & Domestic Commerce, Department of Commerce. More personnel will be added to the group to represent experience in actual operation of plants on cottons, woolens and worsteds, and synthetics.

Recommendations of this group will be passed upon by the head of the Economic & Scientific Division, by the Far Eastern Advisory Council, and by General MacArthur. It is understood that after the skeleton of the plan is approved, the details will go back to the textile group for specification. The first step is setting up a textile-production objective, with allocation of so much for domestic use and so much for export.

TEXTILE WORLD *embodies the following antecedent and absorbed publications: Industrial Record, Manufacturers Review and Industrial Record, Textile Record, Textile World Record, Textile Manufacturers Journal, Textile World Journal, Posselt's Textile Journal, Textiles, and Textile Advance News.*

Running Flax

(*Continued from page 107*)

To meet the growing demand for mixed yarns in prewar years, cotton-machinery manufacturers introduced modifications in the design of cotton carding, drawing, roving, and spinning machinery to permit the processing of fibers up to 3 in. in length. On the adapted card designed by Saco-Lowell Shops, three pairs of workers and clearers replace the usual flats.

The fluted feed roll is replaced by one clothed with tapered-point hardened wire, which retains a firmer grip and thus ensures more complete separation of the fiber.

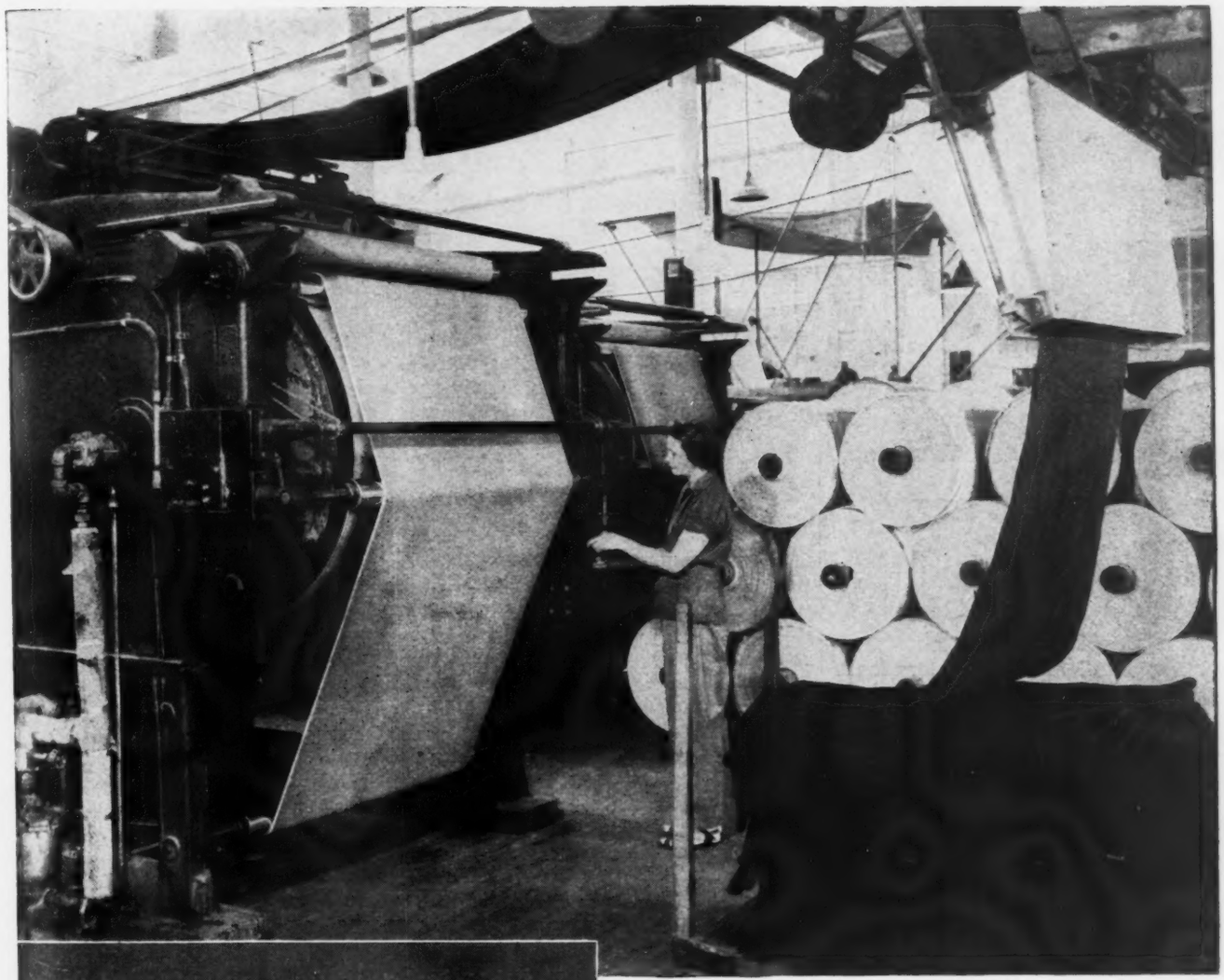
Modifications of the drawing frame permit the use of four rolls. The bottom rolls are standard fluted metallic rolls, while the top rolls are covered with cork or other material of a similar nature. They are spaced over the staple length to give a spread of approximately 9 in. Roving and spinning frames are also designed to accommodate the longer fiber. For spinning, the long-draft frame is recommended. With this arrangement, the single leather apron is driven by a back bottom knurled roll. The other bottom rolls are fluted, and two or more intermediate slip rolls are employed.

WORSTED SYSTEM. Considerable success has also attended the processing of stapled flax on worsted machinery. Worsted processing approximates more closely in design and principle of operation that normally employed for working flax tow fiber than does cotton processing. In the worsted procedure, it is desirable that the pre-treatment should be designed to ensure staple fiber of uniform length approximating the length of wool—4 to 6 in.

A softening or opening process is necessary following de-gumming and drying to eliminate caking and to prepare the fiber for carding. The latter operation can then be effected satisfactorily on the standard worsted card, in which the loss incurred will be determined by the efficiency of the preceding operations. A gilling operation subsequent to carding helps to parallelize the fibers in the sliver and to reduce comb losses.

The drawing and roving operations incidental to sliver weight reduction and to the production of a suitable roving package for spinning can also be effected on standard worsted machines. The type of spinning frame will be determined by the yarn required.

Flyer, cap, and ring spinning are eminently suitable for the production of staple flax yarns.



Photograph courtesy Renfrew Bleachery, Travellers Rest, S. C.

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● NOPCO 2272-R can step up the volume and quality of sanforized goods, because this homogeneous, hygroscopic clear oil is easily soluble in water and capable of imparting instantaneous rewetting. Its exceptional penetrating qualities assure more uniform shrinkage during the sanforizing operation.

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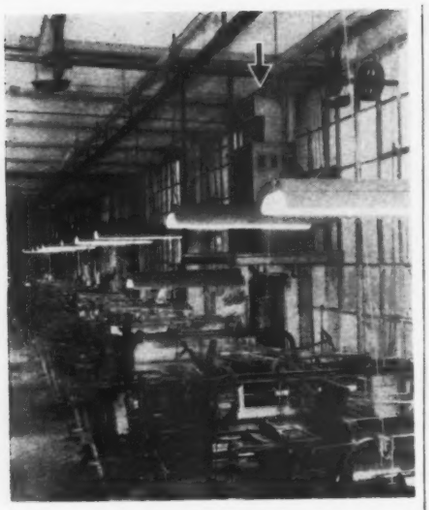

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The Air-Perme-Ator is used in warping, winding, carding, spinning, and weaving sheds; in knitting plants; and dye houses. It has proved its merits in scores of leading rayon, cotton, and woolen mills in the last ten years.

More and more mills are changing to the Air-Perme-Ator because of the economy and efficiency of this new system of "dry" humidification.

Write today for "Bulletin A T" describing the Air-Perme-Ator.

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IP Machine Used to Measure FRICTION of TEXTILES

HIGHLIGHTS: *Effect of sliding one cloth upon another measured by attachment to conventional testing machine—Results reported to be reproducible.*

By *RUSSELL A. ARMITAGE,* *United States Testing Co.*

FOR MANY YEARS there has been interest in a suitable test for determining the coefficient of friction of fabrics and other flat surfaces. Many established methods for measuring the coefficient of friction have been tried, but they have been unsatisfactory for various reasons.

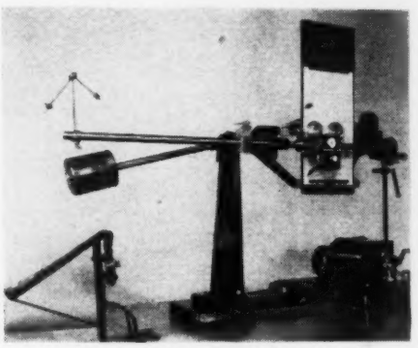
Our experience with the incline-plane method has been that it works well on smooth-face fabrics; but when a rough surface such as a pile fabric is tested, the apparatus does not check well. We have also tried a method which tests kinetic friction by sliding one fabric over another and measuring the pull required. We found that it was difficult to calibrate the machine to cover a wide range of fabrics due to the over-sensitivity of the apparatus. In other words, we found it difficult to compare a pile fabric with a smooth-face fabric when using this apparatus.

SET UP DESCRIBED. Our method for measuring coefficient of friction consists of measuring the pull required to start a weight sliding on a smooth surface. The pull is measured by use of a Scott incline-plane tester (IP-2) set up as follows:

A smooth surface approximately 9 in. by 3 in. is provided, which is capable of being set at a slope of 30° to conform to the angle of pull as described later. A pulley is fastened to the bar which supports the fixed clamp on the IP machine directly opposite the fulcrum of the machine. (See photograph.) The smooth surface is covered with a sample of fabric which is to be used as the testing surface. This fabric is fastened at the lower end of the plane, and a 6-oz. clamp is suspended on the end of the fabric which hangs over the top end of the plane.

A metal block of known weight (136 grams) with a bearing surface 2 in. by 1 in. is provided with a means for fastening the cord to the block. A specimen of fabric which is to be used with the block is cut out 4 in. long and ½ in. wide. The specimen is fastened to the block so that a strip 2 in. long and ½ in. wide provides the surface in contact with the cloth on the plane.

The fabric used as a surface on the inclined plane should be a fabric which will be commonly in contact with the materials being tested. For example, if upholstery fabrics are being compared, it would be wise to use a popular type of suiting fabric to cover the plane.



Friction is measured by determining the pull required to move the weight on the slide at the left.

The inclined plane is placed to the left of the machine on a table at the same height as the table supporting the IP machine. The cord which is to pull the block is run from the block at the bottom of the incline over the pulley at the fulcrum of the machine and fastened in the pulling clamp of the IP machine. The position of the plane is adjusted until the angle of the cord or direction of pull is parallel with the 30° angle of the plane.

The machine is started and the pull in grams necessary to start the weight sliding is read from the chart.

CALCULATIONS. In order to determine the coefficient of friction for the fabrics being tested against the specified cloth base, use the following formula:

$$\text{Coef. of friction} = \mu = \frac{P}{M \cos \theta} - \tan \theta$$

P = Force in grams to start block up the plane

M = Total mass in grams including metal block and cloth

θ = Angle of plane to horizontal

For $\theta = 30°$ this reduces to

$$\text{Coef. of friction} = \mu = \frac{1.155\ P}{M} - 0.577$$

Experience with the apparatus described has shown that results can be reproduced over a wide range of fabrics.

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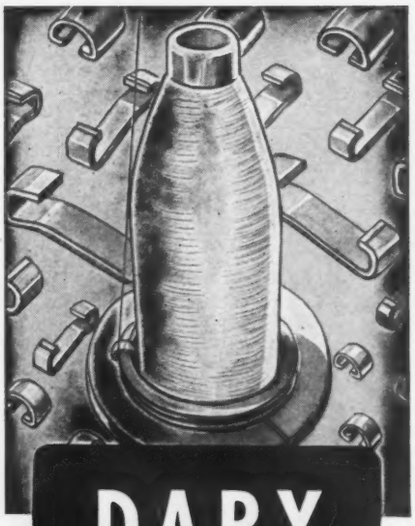

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News of the month

Cotton Council Meets. The delegate membership of the National Cotton Council, representing the cotton industry in 17 states, will gather in Memphis January 22 to 24 to study the fiber's postwar future and to draw up far-reaching projects to expand its markets. Programs in the fields of cotton research, marketing and production, sales promotion and export expansion will be designed to enlarge cotton consumption and to increase farmers' profits through production efficiency. Among projects to be considered is support of mandatory identification of cotton products in advertising and on labels. The proposed program calls for federal legislation requiring that the word "cotton" be used in all advertising and on labels of textiles made from cotton. It already has been endorsed by several farm groups, including the American Farm Bureau Federation. Keynoting the vital postwar work to be done by the council as cotton's united front will be addresses by George A. Sloan, of Nashville, Tenn., publisher of the *Southern Agriculturist* and former president of the Cotton-Textile Institute, and Oscar Johnston, of Scott, Miss., council president.

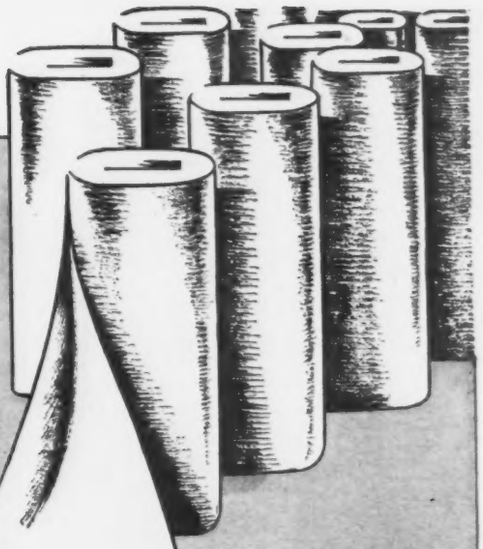
CPA Order Hampers Wool Goods. Arthur Besse, president of the National Association of Wool Manufacturers has released the contents of a telegram to J. D. Small, of CPA, who ordered woolen mills to set aside 85% of their first quarter yardage of certain fabrics for the government's much criticized low-cost clothing program. Mr. Besse told Commodore Small that the program was impractical and instead of helping was interfering with the production and orderly distribution of fabrics for men's apparel. Mr. Besse said the order added nothing but confusion to the industry's efforts to increase production of suitable men's wear fabrics.

Chicago Yarn Men Elect. The annual meeting of the Chicago Yarn Men's Club was held on Dec. 17. Election of officers for 1946 resulted in the following: president, A. H. Emerson; vice president, F. W. Kingsley; secretary, C. F. Peffer; treasurer, M. A. Henderson. A very special program is planned for the 25th annual outing for 1946.

Philadelphia Alumni Hold Banquet, Plan Another. The first New York banquet of the Alumni Association of Philadelphia Textile Institute, Dec. 14, was attended by 300. Alban Eavenson, chairman of the Institute's Building Fund Campaign, reported the drive at "close to $750,000" toward the $2,000,000 goal. Carl C. Mattman, Jr., '16, alumni president, presented Mr. Eavenson with a testimonial scroll for his long service to textile education. Dr. Harold DeWitt Smith, of A.M. Tenney Associates, delivering the main address, urged broader cultural education for textile students. Charles W. Carvin, '23, vice president of Industrial Rayon Corp., was toastmaster. The 45th annual mid-winter banquet will be held at Bellevue Stratford Hotel, Philadelphia, Jan. 31. Guest speaker will be Edwin D. Fowle, publisher of TEXTILE WORLD, on the subject, "Looking Ahead in Textiles."

OKs Cotton Passenger-Car Tires. The Pace Cotton Committee has informed the National Cotton Council that recent government tire tests do not substantiate magazine and newspaper advertisements claiming that rayon cord is superior to cotton cord in all types of tires. The committee reported that cotton cord in passenger car tires withstood all tests applied to it and was in good condition after 68,000 miles of high-speed driving. In addition, the tests showed a much improved cotton cord can be produced by the use of certain varieties of cotton. Passenger car tests were discontinued, the Pace committee said, after cotton cord tires driven at 60 miles an hour had outworn their original treads and a recap tread, and were still in condition good enough for another recapping.

N. C. Safety Award. More than 6,250,000 manhours were worked without a single disabling injury in the Tenth Annual Statewide Textile Safety Contest, according to a report just issued by E. G. Padgett, Director of Safety for the North Carolina Industrial Commission, Raleigh, N. C. The Industrial Commission and the North Carolina Cotton Manufacturers' Association cosponsor this annual safety event. The accident frequency rate made during 1945 was the lowest since 1941, being 14.36, as compared with 15.50 in 1944, and 16.40 in 1943. This year a total of 425 mills participated, of which 47 mills, working 6,370,635 hours, completed the contest without a disabling



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injury. Group winners in the 1945 contest were as follows: Group 1, Peck Mfg. Co., Warrenton; Group 2, Adrian Mill, American Yarn & Processing Co., Mount Holly; Group 3, Mayfair Mills, Burlington Mills Corp., Burlington; Group 4, Ossipee Weaving Co., Burlington Mills Corp., Burlington; Group 5, Cleveland Cloth Mills, Shelby; Group 6, Stonecutter Mills Co., Spindale; Group 7, Firestone Textiles Corp., Gastonia. Ossipee has completed five consecutive contests as a trophy or certificate winner and is eligible for the special Governor's Textile Safety Award.

Cotton Men Oppose Ceilings. Proposed price ceilings on raw cotton would completely disrupt the entire cotton marketing system, "with consequent injury to every branch of the raw cotton industry," Oscar Johnston, president of the National Cotton Council declared in voicing the council's complete opposition to the ceilings in a telegram to OPA Administrator Chester Bowles. Mr. Johnson said that the council viewed with absolute disfavor the abandonment of the present cotton price-stabilization program merely because "the price of cotton has advanced slightly above parity for a short period of time." He added that the stabilization program had worked perfectly for the last 3½ years, and contended that the present system is the only sound means of stabilizing the price of cotton. "If OPA insists upon stabilizing the price of cotton at parity, or at any other level," he said, "the only sound method of accomplishing this is through the principles embodied in the present cotton price stabilization program."

Felt Men Meet. At the annual meeting of the Felt Association, Inc., on Jan. 15, at the Union League Club, New York, Raymond R. Stevens, director of research of the Felters Co., Millbury, Mass., made a report to the felt industry on the investigation of the German compressed-felt industry which he made in Germany recently. Felt samples were shown and there was an interesting question period.

Proposes Canadian Pilot Plant. Development of a textile pilot plant to work out industrial problems, in a frank copying of German methods, is recommended by Harold Fisher, of Montreal, one of 45 Canadian scientific and technical experts who returned recently from an investigational tour of Germany. Mr. Fisher, research development engineer of Dominion Textiles, Ltd., is confident the industry could be assisted materially by the plan, and other members of the group cite it as a star example of the objective in seeking reparations—a taking of ideas rather than capital goods. Most of the experts after having had a close-up study of German plants were opposed to the seizure of large quantities of capital goods as war reparations. The proposed Canadian plant would be a frank copy of the German model, which, financed by state and industrial funds, was situated at Denkendorf. Mr. Fisher pointed out that Denkendorf had contacts with all the leading machinery makers—those outside of Germany as well—and would tackle all the problems of the industry and would pass their findings on to the industry.

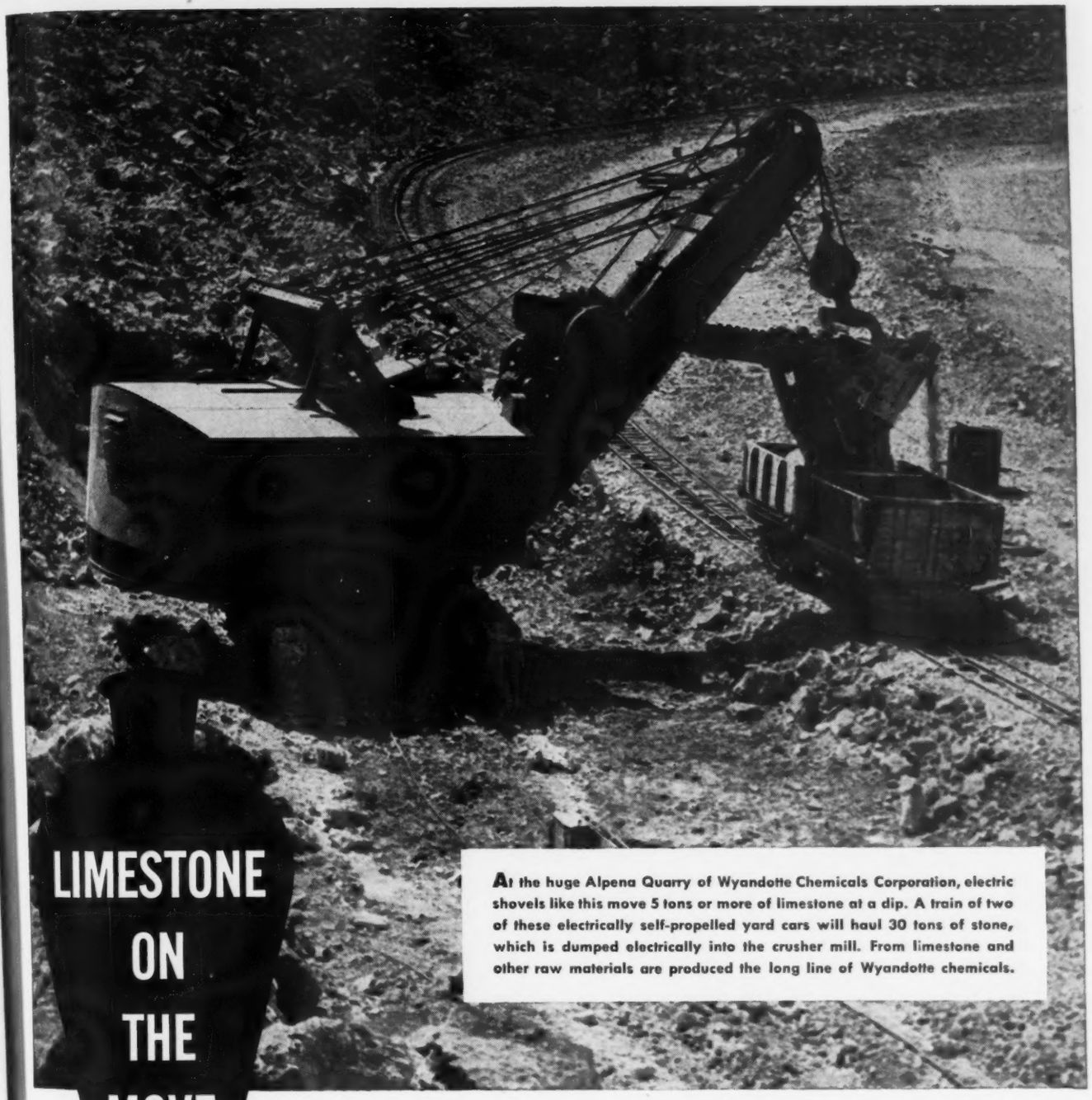
Chicago Chemical Show. The National Chemical Exposition has been moved up to Sept. 10 to 14 inclusive in 1946 and will be held at the Chicago Coliseum at 15th and Wabash Avenue. As usual, it will be sponsored by the Chicago Section of the American Chemical Society. Marcus W. Hinson will again be exposition manager.

Southern Garment Meeting. The Southern Garment Manufacturers Association will meet in Atlanta Feb. 4, 5, and 6 with headquarters at the Atlanta Biltmore Hotel.

Rayon Mill for Egypt. Oscar Kohorn & Co., Ltd., New York, has received contract for a viscose rayon plant to be constructed in Egypt. This involves the third largest project ever undertaken in the Near East (outranked only by the Suez Canal and a sugar factory). Dollars were allocated by the Egyptian Minister of Finance. American sources will furnish all special machinery and the less specialized equipment will come from Great Britain. Kohorn chemists and engineers will supervise the erection of the plant and put it in operation. Egyptian technicians will be trained in experimental stations in this country.

Simulated Leather. A newly improved simulated leather known as Terekan 12 which strongly resembles genuine leather in many respects, including workability, eye appeal, and flexibility, has been announced by Athol Mfg. Co.

50th Anniversary. Merrimac Mills Co., Methuen, Mass., celebrated its 50th anniversary on Dec. 24. Alfred C. Gaunt, president of the company for the last 39 years, is son of the late Henry Gaunt who brought the heritage of wool manufacture from England and established the plant in Methuen in 1895. Abbot Gaunt, of the third generation, is general manager and the director of the plant's most recent modernization. The anniversary banquet, held the day



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before Christmas, was attended by over 300 employees and friends including Miss Cora Lupien with a record of 41 years of service to the company. Merrimac produces worsteds including the branded lines Aristo-Tex and Travel-Tex.

How Avondale Spends Its Dollar Receipts. Avondale Mills, Sylacauga, Ala., has reported to its employees on the financial results of its fiscal year ended July 31, 1945, during which customers paid the company $43,503,-849. A pie chart published in The *Avondale Sun* indicates the following dispersal of each dollar received by the company:

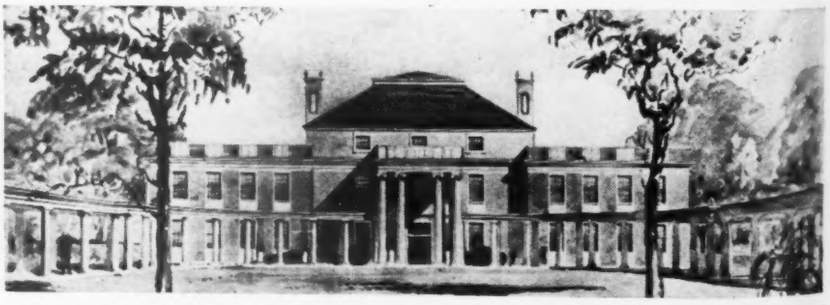
Cotton and other raw materials	49.30¢
Wages and salaries	25.73¢
Taxes	7.32¢
Supplies and repairs	6.88¢
Selling commissions	2.78¢
Freight and discounts	2.37¢
Power and fuel	1.83¢
Other expenses	1.35¢
Dividends to stockholders	1.16¢
Depreciation	0.85¢
Retained for future needs	0.43¢

The wages and salaries item of 25.73¢ was broken down as follows: Employees regular pay, 22.22¢; employees profit sharing trust, 2.33¢; employees' bonuses, 0.82¢; paid to company officers, 0.36¢.

"Wedge" to Replace Zoot Suit. According to the *Dylogram*, published by Dykeman, Loeb & Co., designers are concentrating on a new model suit for men to be known as the "wedge", and which is expected to render the drape and lounge models as obsolete as pleated backs on sport jackets. This coat, resembling the "box" shape, will have less looseness in the chest and waist, while increasing comfort by straight vertical lines front and back. Shoulders will not be accented to the same extent as in the past, and lapels will be full with a long roll to low-set buttons.

***PRACTICALITY** mixed with elegance is what the 1946 woman wants in her postwar wearing apparel, as indicated in the balloting at the capacity audiences which determined the four grand prize winners in the Chicago Tribune's sixth annual $6,500 American fashion competition. The beaver trimmed wool suit, shown above, with pencil-slim skirt topped with a hip length jacket by Valerie Gelembert, free lance designer and teacher in the Fashion Academy, New York, was chosen as winner of the grand prize of $2,000.*

Safety Award Presented to Frank Ix & Sons. Working over 300 consecutive days without a lost time accident, amounting to 1,650,000 man-hours, has won for Frank Ix & Sons, Inc., a safety award presented by Liberty Mutual Insurance Co. This award, going to the Charlottesville, Va. plant, is only one of a number of awards that this plant has received during the war. Among them are the Army-Navy "E" Award four times and a personal citation for the bond drive by Henry Morgenthau Jr.



ARCHITECT'S DRAWING of the engineering and applications building of the Institute of Textile Technology, Charlottesville, Va., which has been approved for construction. This one building will house the laboratories for chemical, physical, and engineering research until such time as separate buildings for these activities are constructed. It will then become exclusively the engineering and applications building.

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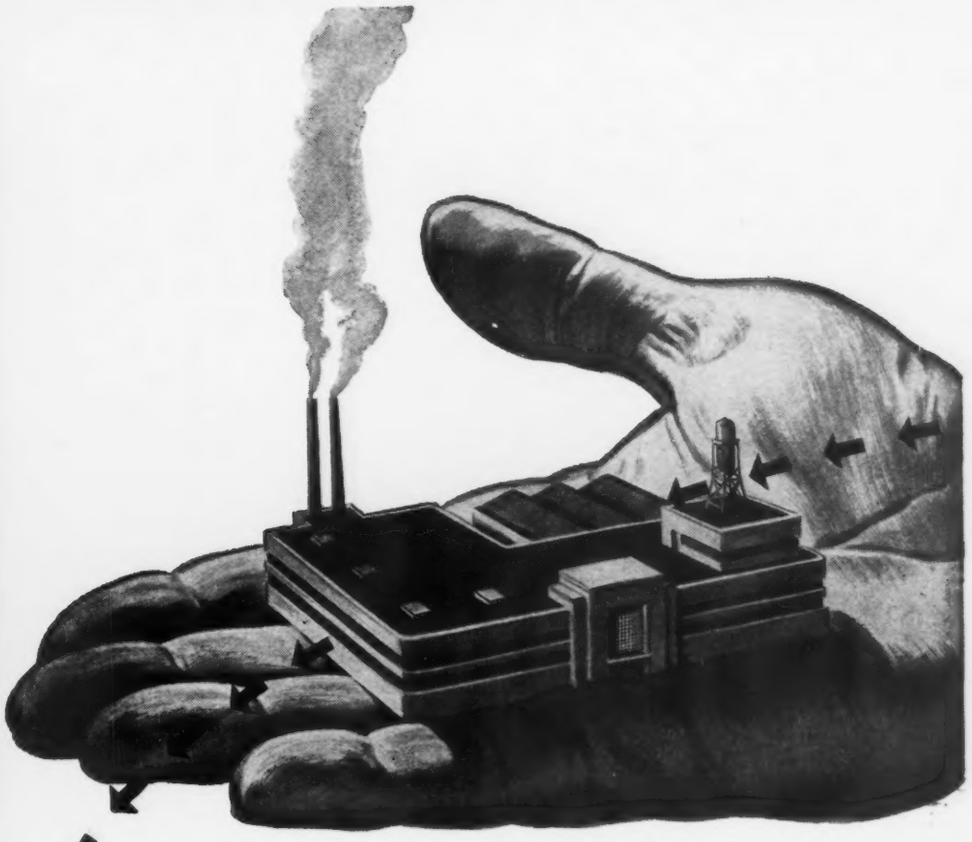

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NEWS ABOUT Suppliers

Smith, Drum & Co., Philadelphia—Released from the Army in November, Lt. Col. Joe M. Ballentine has rejoined Smith Drum as Southern representative. He was ordered to active duty in 1941 as a first lieutenant. After work in various parts of the European theater he closed his service as an assistant to chief of staff, Army Services Forces. Lt. Comdr. P. M. Parrott, has also returned to Smith Drum and will share with Mr. Ballentine the direction of the company's Southern sales activities. Mr. Parrott entered the Navy in 1941 as a lieutenant j.g. After service in the Pacific he was returned to the U. S. and at time of his discharge was administrative and fiscal officer of the U. S. Naval Clothing Depot, Brooklyn, N. Y.

Sun Chemical Corp., formerly General Printing Inks Corp., New York, has acquired **Warwick Chemical Co.**, West Warwick, R. I., and all its subsidiaries. Ernest Nathan continues as president of Warwick, of which the policies and personnel remain unchanged. Dr. William Talbot, technical director and secretary of Sun Chemical Corp., becomes president of its fine chemical division which includes, in addition to Warwick, the pigment division of the parent company. Ira S. Hurd has been appointed director of textile application of the Warwick Chemical Co. with offices at the West Warwick plant. He was formerly superintendent of the technical department at Riverside & Dan River Cotton Mills, Danville, Va., and has served in various technical capacities with Rohm & Haas, Glenlyon Print Works, General Dyestuff Corp.

Foster Machine Co., Westfield, Mass., following the resignation of W. L. Wetzell, Jr., has appointed Ernest P. Dodge and Edwin H. Ely as sales representatives for North Carolina, South Carolina, and Virginia. Headquarters of both men will be 509 Johnston Building, Charlotte, N. C.

Draper Corp., Hopedale, Mass., is reported at Atlanta, Ga., to have acquired a site in Atlanta on which it will erect a structure containing 80,000 sq ft. and costing about $400,000.

ROBERT LEESON, who has returned from four years of service in the United States Navy with rating of commander. He has been re-elected president of Universal Winding Co., Providence, and has resumed this post from which he resigned in 1941 to enter the service. He is grandson of the founder of the company. His father, Robert A. Leeson, retired president, is now chairman of the board. Parkman D. Howe, who served as president during Robert Leeson's absence, becomes executive vice president.

Carrier Corp., Syracuse, N. Y., has opened a factory branch office in the Liberty Life Bldg., Charlotte, N. C., under managership of R. S. Fullerton.

Kerby Saunders, Inc., New York, has established Southern headquarters at 101 Marietta St., N. W., Atlanta 3, Ga. Office is in charge of I. Ben Kagey, formerly Southern manager of Carrier Corp., and Arthur J. Manning, formerly president of William A. Manning.

Industrial Safety Service, Atlanta, Ga., has been organized by Franklin Knight, Jr., former chief safety engineer of the Bell Bomber Plant at Marietta, Ga. It will specialize on industrial accident prevention and hygiene engineering.

General Electric Co.—Twenty-seven editors and executives of McGraw-Hill publications, including E. D. Fowle, of TEXTILE WORLD, visited the headquarters of the Chemical

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Rigged with ParksTurbo Traveling Cleaners, frames are blown off every three or four minutes.

Lint and fly do not get a chance to be spun into the yarn. They are shooed away.

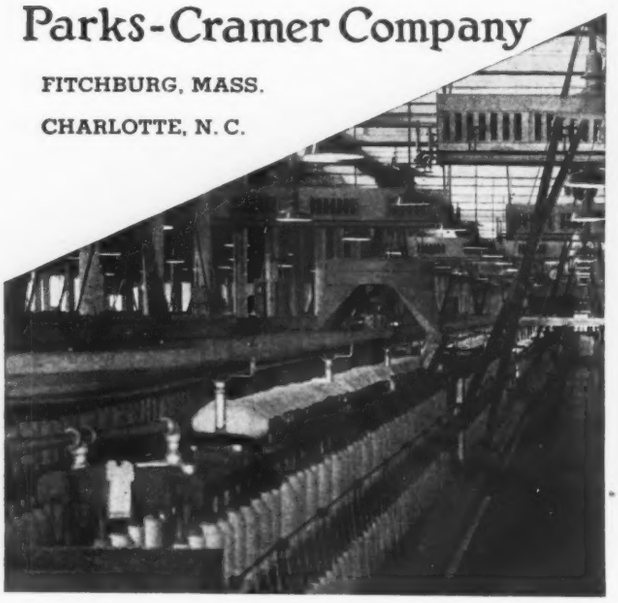
Hand cleaning, done as often or as regularly, might be better. But what spinner would want to fan a frame (not to mention five or six) fifteen or twenty times an hour? Or who would want her to?

ParksTurbo Traveling Cleaners take the drudgery out of spinners' work—and earn their keep besides.

Parks-Cramer Company

FITCHBURG, MASS.

CHARLOTTE, N. C.



Department of the General Electric Co. in Pittsfield, Mass. Dec. 10 and 11. Dr. Zay Jeffries, vice-president of the General Electric Co. and general manager of its Chemical Department reviewed the organization of the department and its objectives. W. H. Milton, Jr., manager of the Plastics Divisions, and E. L. Feininger, manager of the Resin & Insulation Materials Division, both also assistant managers of the department, reviewed the activities of their divisions. D. S. McKenzie, general sales manager, described the products of the department and R. L. Gibson, manager of advertising and sales promotion, reviewed the department's 1946 plans in advertising.

Roger Cutler, long a supplier of such textile-mill items as spinning tapes, roller coverings, and temple rolls, has returned from a five-year service in the Navy. He started his service as a lieutenant commander at the Jacksonville, Fla., air station, and was finally a commodore in the Pacific. In 33 months of combat-area duty he was active in 12 major engagements. He will resume his former business, with offices located in Boston and Greenville.

Procter & Gamble Co., Cincinnati, Ohio, has added Bertil A. Ryberg to the staff of its Textile Research Department of the Chemical Division. He was previously associate director of research for the American Association of Textile Chemists & Colorists at the Lowell Textile Institute.

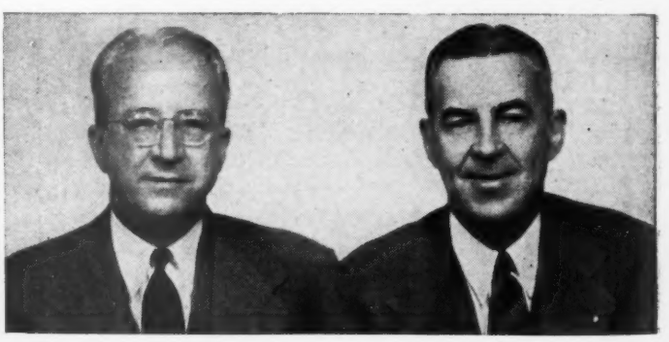
Owens-Corning Fiberglas Corp., Toledo, Ohio, has appointed Ludlow King as manager of its Washington, D. C., office. Mr. King recently retired from Chemical Warfare Service in which he was a lieutenant colonel. He succeeds C. R. Donovan, who resigned to establish his own firm as a Washington business consultant.

John Waldron Corp., New Brunswick, N. J.—Emil Schnitzspahn, after 32 months in the Navy, has returned to Waldron as sales engineer. He had been with the company before entering the service for over 20 years. In the Navy he held the rank of lieutenant commander.

Ciba Co., New York.—C. O. Stevenson has recently received his discharge as major from the Army and has rejoined the Ciba sales staff at Charlotte, N. C.

Atlantic Chemical Co., Centredale, R. I., and Paterson, N. J., has added to its sales staff John A. Kidney of Dorchester, Mass., who will contact both the textile and the leather industries. Mr. Kidney is a former captain in the Marine Air Corps. He saw action at Guadalcanal, Munda, Bougainville, Rabaul, and Kavieng.

Impregnole Corp., New York, has added to its sales staff Harry



WATSON & DESMOND, Charlotte, N. C., has been formed by Clifton E. Watson (left) and S. P. V. Desmond (right) to handle a complete line of bobbins, spools, shuttles, reeds, heddles, frames, twine harness, and belting for the entire South. Among the manufacturers which they will represent are Emmons Loom Harness Co., Watson-Williams Mfg. Co., D. P. Brown & Co., Vermont Spool & Bobbin Co., and Dana S. Courtney Co. (Georgia, Alabama, Mississippi, Louisiana and Texas). Clif Watson was general manager and in charge of sales for Watson-Williams Mfg. Co., 1922 to 1940, at which time he was appointed manager of southern sales for Emmons Loom Harness Co. Pat Desmond for the last 18 years has been associated with Crompton & Knowles Loom Works and has handled all business for them in Georgia, Alabama, Mississippi, Kentucky and Tennessee, and recently has served some of the mills in the Carolinas and Virginia. Although the new firm started operation as of Jan. 1, Mr. Desmond will continue his connection with Crompton & Knowles until April 1. The new firm will also have offices in Greensboro, N. C., Greenville, S. C., and Atlanta, Ga. Walter Daboll will have charge of the Greensboro office, and John F. Littlefield of the Greenville office.

Stop!

Watch this space for an important announcement to the textile industry!

by the

DURANT MANUFACTURING COMPANY

1931 N. Buffum Street
Milwaukee 1, Wisconsin

131 Orange Street
Providence 3, R. I.

DAVIS AND FURBER

Earn a Manufacturing Profit By Using the Best Machinery and Supplies

DUSTERS
PICKERS
CARDS
MULES
WOOLEN SPINNING FRAMES
SPOOLERS
DRESSING FRAMES
NAPPERS
CARD CLOTHING
NAPPER CLOTHING
GARNETT WIRE
LEATHER RUB APRONS
LEATHER CONDENSER TAPES

DAVIS & FURBER
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

Better Carding Less Bearing Wear

Oils that drip and leak can't stay in bearings and will not protect the close and accurate adjustment of bearings so essential to perfect carding.

NON-FLUID OIL — drip-less and waste-less — stays in bearings, keeping them cool and free from wear. Shows a definite saving on lubricant and application cost. Outlasts oil 3 to 5 times.

Write for instructive bulletin

NEW YORK & NEW JERSEY LUBRICANT CO.

Main Office: 292 Madison Ave., New York, 17, N. Y.

Southern Agent, Falls L. Thomason, Charlotte, N. C.

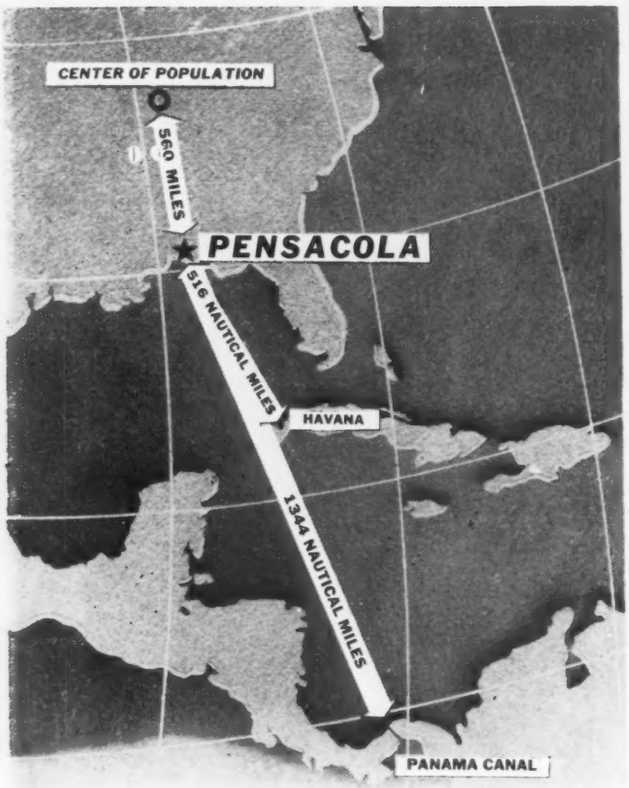
WAREHOUSES

Chicago, Ill. — Atlanta, Ga.
Providence, R. I. — Detroit, Mich. — Charlotte, N. C.
St. Louis, Mo. — Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
U.S. PAT. OFFICE FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month



PROGRESSIVE PENSACOLA

Offers low plant construction costs . . . low maintenance . . . pure, soft water . . . nearness to raw materials and markets.

Textile manufacturers will find that Pensacola's ideal climate for living and working also permits large savings in plant construction and maintenance. Cotton is grown in adjacent territory. Ramie and sizing starch are produced in the nearby Everglades. Pensacola's water is 99.98% pure and there's plenty of it.

Pensacola is close to the U. S. center of population and the rapidly growing markets of the south, mid-west and Latin-America.

Labor is cooperative, easily-taught and plentiful; taxes low. Cheap power, natural gas, oil and coal available. Two railroads, barge, air and steamship service assure adequate transportation to domestic and foreign markets.

Write today for specific information about Pensacola's advantages.

INDUSTRIAL DEVELOPMENT DIVISION . . .

MUNICIPAL ADVERTISING BOARD PENSACOLA Florida

NEWS ABOUT SUPPLIERS

G. Kennedy, recently discharged as chief petty officer after four years with the United States Coast Guard. He was with Deering Milliken & Co. before entering the service.

Tennessee Eastman Corp., Kingsport, Tenn., has established New York sales offices at 10 East 40th St. A. M. Tenney Associates, Inc., at the same address, will continue to act as sales representatives for Eastman acetate rayon and staple fiber. Sales of Tennessee Eastman's plastic, Tenite, and it cellulose esters in the New York area will be in charge of William L. Scarles. F. L. Bume will handle the recently introduced line of Eastman acetate dyestuffs, and sales of other Tennessee Eastman chemicals in this district will also be made from the new offices. R. C. Tuttle will direct the corporation's advertising.

Mill & Textile Supply Co. is the name of a new firm opening at Birmingham, Ala. It has been organized by L. S. Selman and John E. Urquhart, operating as a partnership. Mr. Urquhart was formerly general manager of Woodward Iron Co., and Mr. Selman has had 26 years experience with Moore-Handley Hardware Co.

United States Testing Co., Inc., Hoboken, N. J., has moved its Chicago Testing House to 325 West Huron St.

Carolina Roller Shop, Lincolnton, N. C., has been incorporated with authorized capital stock of $15,000 to deal in tex-

AZEL W. MACK, who has been appointed by Dexter Chemical Co., New York, as vice president of its Textile Chemicals Division and in charge of sales out of its Boston office. He was for the last five years with Hart Products Corp. Dexter has added Mortimer Bayer, lately of Hart Products Corp., to its sales staff.

***ROBERT N. APPRICH** has been named a vice president of Textile Machine Works, Reading, Pa. With the company for 27 years, he has been sales manager in charge of knitting machine sales since 1936.*

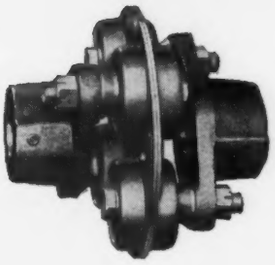
tile machinery. Incorporators are Odell M. Harvey, Marvin S. Hartman, and Grady E. Howard.

Celanese Corp. of America, New York, has acquired a new plant at Belvidere, N. J., for the production of chemicals, plastics, and related products. Present plans call for ultimate expenditure of more than $10,000,000 and employment of about 750 persons in the first phases of the operation.

Firestone Industrial Products Co., Akron, Ohio, has appointed Percy A. Legge as selling agent throughout the United States for the covered elastic thread which carries the trade-marked name of "Contro." In addition Legge will handle the sale of both cut and extruded bare thread. The firm has been identified for many years with the sale of these yarns, and maintains offices in Philadelphia, New York, and Boston.

H. A. Florsheim Co., New York, has been appointed exclusive American selling agent for Nahums Union Mills Ltd., of Manchester, England. The firm has also been designated direct sales agent for three domestic yarn mills which will spin synthetic blended yarns for the weaving and knitting trades. George W. Le Valley, formerly assistant manager in charge of the yarn department of the United Cotton Products Co., is now associated with the Florsheim organization.

Walton & Lonsbury, Attleboro, Mass., operators of a complete industrial hard chromium plating service, are planning the



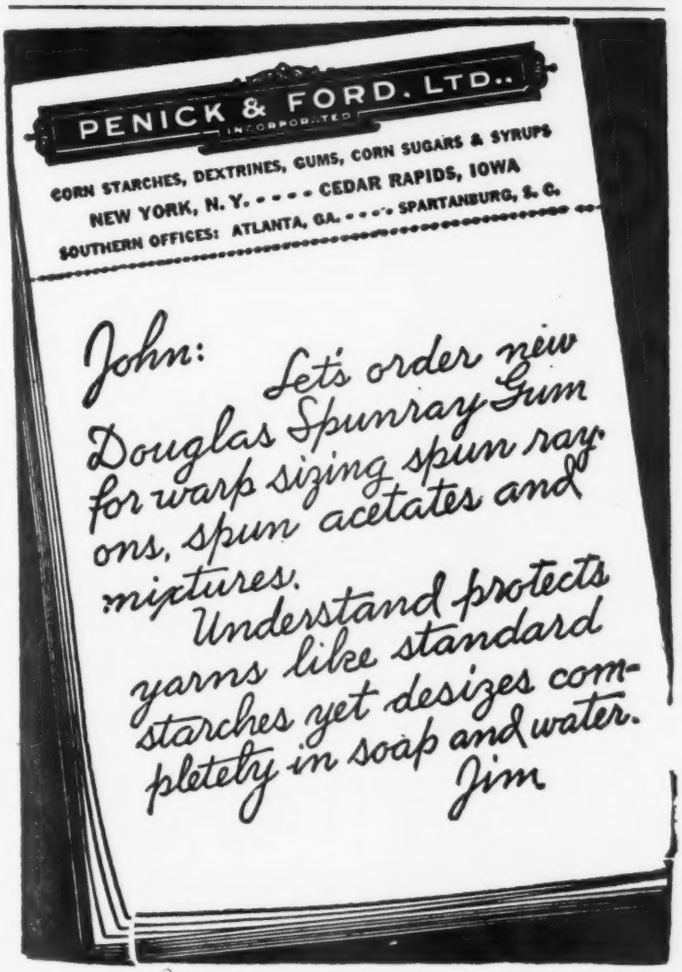
A clean coupling
MORFLEX
requires no lubrication!

Specially designed rubber trunnion biscuits eliminate all metal on metal contact, make lubrication unnecessary. No oil or grease to throw off and soil or spoil products. Morflex absorbs shock, isolates vibration, smooths machine operation. Sized from 2" to 12" diameter for various capacities.

MORSE CHAIN CO. • Detroit 8, Mich. • Ithaca, N.Y.

A Borg-Warner Industry

MORSE COUPLINGS and DRIVE SHAFTS


PENICK & FORD, LTD.
INCORPORATED
CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.
John: Let's order new Douglas Spunray Gum for warp sizing spun rayons, spun acetates and mixtures.
Understand protects yarns like standard starches yet desizes completely in soap and water.
Jim

John P. Maguire & Company

INCORPORATED

Factors

370 FOURTH AVENUE
NEW YORK, 10,
N. Y.

Check Credits

Cash Sales

Absorb Credit Losses

CORRESPONDENCE INVITED

SOUTHERN FACTORING
for
SOUTHERN BUSINESS
A prompt, efficient service nearby . . . removing all credit risk and collection expense.
TRUST COMPANY OF GEORGIA
ESTABLISHED IN 1891
ATLANTA
"NEXT DOOR TO EVERY MILL IN THE SOUTH"

NEWS ABOUT SUPPLIERS

early installation of special equipment for vertical plating of rolls.

Stauffer Chemical Co., New York, through its wholly-owned subsidiary, American Cream of Tartar Co., San Francisco, Calif., purchased on Dec. 28 the Tartar Chemical Works, Brooklyn, N. Y., a subsidiary of Standard Brands.

E. I. du Pont de Nemours & Co., Rayon Department, has appointed Dr. Ernest B. Benger general assistant manager of the Technical Division of the Rayon Department, to be manager of the division succeeding M. du Pont Lee, who was recently named general consultant in the Engineering Department. A. E. Buchanan, Jr., continues as assistant manager of the Technical Division.

Hooker Electrochemical Co., Niagara Falls, N. Y., has assigned Ralph E. Davis as its representative in the New England states with headquarters at Boston, Mass., and Charles Y. Cain to the sales territory in the vicinity of Chicago.

E. F. Houghton & Co., Philadelphia, has appointed J. C. Mahaffey as warp size specialist. He replaces the late J. H. Reid, who conducted this service for Houghton for the last seven years. Mr. Mahaffey has had 27 years in the cotton manufacturing business, having been overseer of weaving at Callaway Mills and Opelika Mills. He recently resigned as superintendent of Rushton Cotton Mills, Griffin, Ga. He will work under the direction of W. H. Brinkley, general sales manager, Southern Division, Charlotte, N. C.

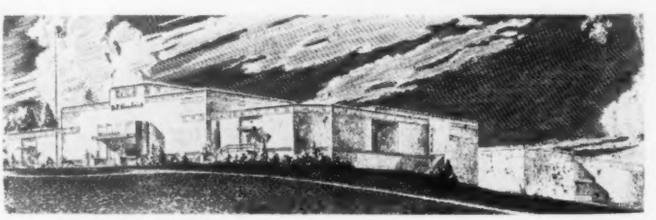
American Hard Rubber Co., New York, has acquired the entire Saran Division of the Hodgman Rubber Co., Framingham, Mass. This expansion will not only include Saran, but Tenite, Lucite, polystyrene, and other thermo plastics. The new Saran Division of American Hard Rubber will be headed by S. J. Smith.

ROBERT R. WASON, president of Manning, Maxwell & Moore, New York, who was recently elected president of the National Association of Manufacturers for 1946. He succeeds Ira Mosher of Southbridge, Mass.

Columbia Chemical Division of Pittsburgh Plate Glass Co., Pittsburgh, Pa., has appointed Joseph A. Neubauer to the position of technical adviser.

L. Sonneborn Sons, Inc., New York, has appointed Irving Silverman to the newly-created post of production manager of the plant at Nutley, N. J., and appointed A. Moscowitz to succeed Mr. Silverman as chief chemist.

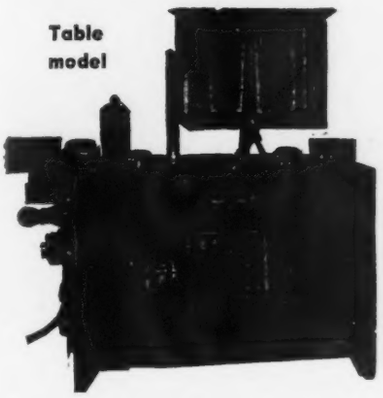
Reynolds Metals Co., has been notified that RFC has approved its offer to lease the government-owned Hurricane Creek, Ark., alumina plant and the Jones Mill, Ark., aluminum reduction plant for five years with an option to purchase. Hurricane Creek is the largest and most modern alumina plant in the world with an annual capacity of 1,555,000,000 lb. Jones Mill, twenty miles away, has a rated capacity of 144,000,000 lb. of aluminum pig.



THE B. F. GOODRICH CO., which 50 years ago established the first research laboratory in the rubber industry, broke ground Jan. 3 for a new and complete research center on a 260-acre tract halfway between Akron and Cleveland, near Brecksville, Ohio. Present plans call for five separate, completely air-conditioned buildings as shown above. The preparation of this center is part of the celebration of the 75th anniversary of the company which started as Goodrich, Tew & Co., in Akron. The original partnership papers were signed on Dec. 31, 1870, and the first building was erected in 1871.

Textile Testing Ovens

Table model



Eight-Basket Oven—Can be equipped with 8 Baskets—3" x 3" square, and 6" deep; or with 6 Baskets, 4¼" x 4¼" and 6" deep. Sets on table in space of 20" x 40".

Check Yarn Samples for Moisture

Test all your yarn, stock in process, and finished goods—for moisture content — with accuracy. Weighing can be made without opening the oven door.

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Equipped with baskets to fit the work. Write for details on EMERSON OVENS to fit your process.

EMERSON APPARATUS CO.

177 Tremont St., Melrose 76, Mass.

TIME-TESTED TIPS FOR MILL MAINTENANCE MEN

Prevent Rusting Of Replacement Parts

Special Protective Oil is Oakite's successful answer for protecting stored replacement parts against rust. Easy to apply . . . simply dip parts in Oakite Special Protective Oil, surfaces immediately take on a thin transparent coating that effectively safeguards surfaces against indoor rust. Oakite Special Protective Oil is particularly handy to have around for quick rust-proofing of wet parts *after* cleaning. No pre-drying is necessary because Oakite Special Protective Oil completely displaces all moisture.

Many valuable ideas for using Oakite Special Protective Oil are contained in handy 16-page booklet. Send for a FREE copy TODAY!

OAKITE PRODUCTS, INC., 42 Thames St., NEW YORK 6, N. Y.

Technical Service Representatives Conveniently Located in All Principal Cities of the United States and Canada

OAKITE *Specialized* **CLEANING**

MATERIALS · METHODS · SERVICE · FOR EVERY CLEANING REQUIREMENT

If you own a Scott Tester, CUT OUT THIS DATA SHEET, No. 1 of a series, and pass it along to your maintenance man.

MAINTENANCE DATA SHEET NO. 1

CALIBRATION OF SCOTT TESTERS

The recording head of an inclinable balance Scott Tester is in reality a weighing scale. However, it works in one direction only, so that it cannot balance back and settle into position if the weight is dropped or otherwise applied too abruptly.

To calibrate, have available a weight of known amount. Balance the machine by allowing the pendulum lever to swing to its normal position, dead center, and adjust the pointer to zero on the dial. Attach the known weight to the upper clamp, which is connected to the chain of the recording head. (In computing the amount of the known weight, include the weight of all apparatus used to attach it.)

Allow the weight to exert its force by lowering gradually by hand. Do not drop it, but do not lower too slowly. Use the speed at which stress is applied in an actual test. The pointer should register upon the dial the exact amount of the known weight plus the attaching apparatus.

The pawls must be in the same position on the quadrant racks as in actual testing. The weight must be attached without binding or friction that would prevent the full force registering on the dial. The weight may be a pail of water, a bolt of cloth, a roll of paper, sash weights, etc. Whatever the weight, it MUST be accurately weighed.

Every Scott Tester is fully tested and calibrated at the factory, therefore, it is safe to assume that accuracy at any one point of the dial indicates a correct machine at all points.

The many Scott Testers supply the needs of testing textiles, rubber, wire, paper, etc., up to 1 ton tensile.

REQUEST "CATALOG & DATA BOOK NO. 45"

SCOTT TESTERS, INC.

95 BLACKSTONE ST., PROVIDENCE, R. I.

WHITMAN YARNS

WORSTED · COTTON · SPUN RAYON

WHITMAN SERVICE

1852-1946

During 94 years The William Whitman Company, Inc., and its predecessors have served the interests of important mills and users of yarns, seeking to establish for its customers a steady flow of dependable, quality yarns.

ARLINGTON MILLS

LAWRENCE, MASS.

Bradford Spun Worsted Yarns, Natural and Slub-dyed Colors and Mixes.

MONOMAC SPINNING CO.

LAWRENCE, MASS.

French-spun Worsted and Merino Yarns. Specialty Yarns—Rabbits Hair, Rayon, Acetate and Other Blend Yarns.

NONQUITT MILLS

NEW BEDFORD, MASS.

Cotton and Spun Rayon Yarns, Merino Blends, Specialty Rayon and Wool Mixtures.

WILLIAM WHITMAN COMPANY, INC.

SELLING AGENTS

BOSTON, 78 Chauncy St. NEW YORK, 261 Fifth Ave.
PHILADELPHIA, 1600 Arch St. CHARLOTTE, Commercial Bank Bldg.

NEWS ABOUT Mills

Cotton Mill News

Airline Products Co., Gastonia, N. C., D. W. Peach owner, has purchased the entire equipment and machinery of the balling department of Textile Yarn Products Co., of Lincolnton, N. C., and has moved the machinery to Gastonia. This equipment will about double the capacity of Airline Products Co.

Angus Mills, Inc., Vass, N. C., recently chartered with capital of $50,000, plans operation of local cotton mill. A. M. Cameron, Vass, is head.

Betty Yarn Mill is under construction at Kings Mountain, N. C., and is expected to be placed into operation early in 1946.

Buffalo Cotton Mills, near Shelby, N. C., has been sold to C. Z. Richardson, of Star, N. C., who will operate the mill to produce yarn for his hosiery mills at Biscoe, N. C., and elsewhere. Another mill will be started near Shelby as soon as a suitable building is located, by Irvin Turk, manager of the Buffalo Mills.

China Grove Cotton Mills, China Grove, N. C. (previously reported) are having plans drawn by J. E. Sirrine & Co., Greenville, S. C., engineer, for proposed addition.

Crescent Corp., Fall River, Mass., has purchased some card room machinery, as well as 16,000 spindles from the Empire Cotton Division of Woods Mfg. Co. Ltd. of Welland, Canada.

Esmond Mills Ltd., blanket manufacturers, Granby, Quebec, plan to erect a branch plant in Perth, Ontario, to contain 20,000 sq. ft. of floor space.

Gastonia Combed Yarn Corp., Gastonia, N. C., plans construction of an addition to its Armstrong unit. Floor plans and processing methods have been worked out by Werner Textile Consultants, Inc., and the P. O. M. Co., industrial consultants, of New York. Orders have already been placed for new machinery, which, it is expected, will be available by the time the building is completed.

Globe Mills Co., Inc., Mount Holly, N. C., has let contract for addition previously mentioned to Southeastern Construction Co., of Charlotte, N. C.

Hannah Pickett Mills, Rockingham, N. C., has been sold to Karl Robbins, president of the Colonial Mills Corp., New York. Colonial now operates Robbins Mills, Robbins, N. C., and Mid-State Cloth Mills, Red Springs, N. C., which have a combined equipment of over 1,000 looms on rayon goods.

M. Lowenstein & Sons, Inc., New York, on Nov. 26 purchased the plant of Merrimack Mfg. Co., Huntsville, Ala., for $1,700,000. Jacob Ziskind, president of Crescent Corp., acted as agent in the transaction for Merrimack, whose main plant is at Lowell, Mass. The sale includes the Huntsville plant and village property. Equipment consists of approximately 110,000 spinning spindles and 2,500 Draper automatic looms. Plant will be operated under name of Huntsville Mfg. Co.

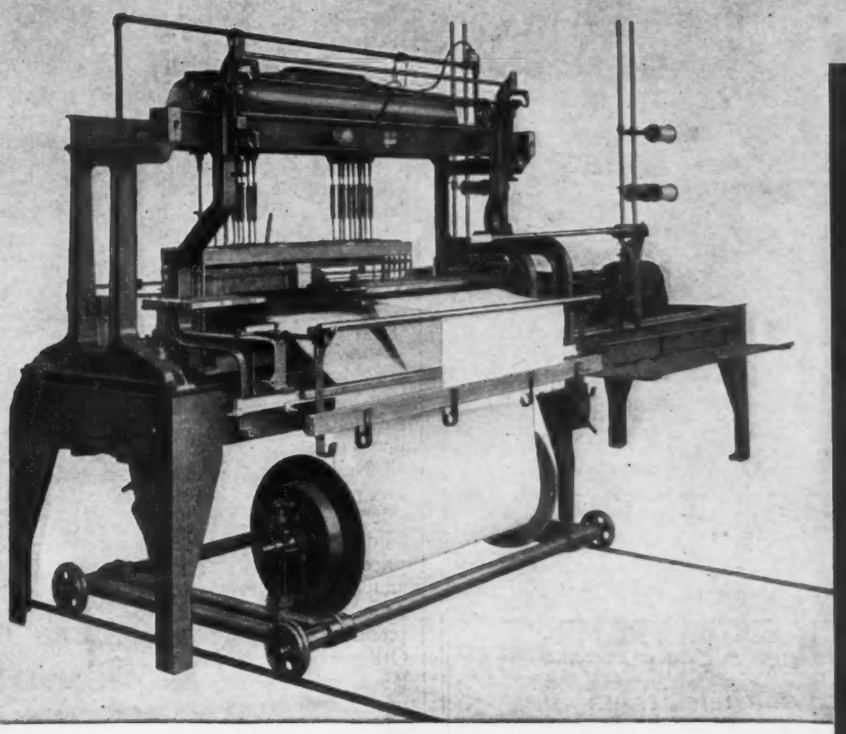
Martinsville Cotton Mills, Martinsville, Va., has been sold by the owners, Chadwick-Hoskins Corp., of Charlotte, N. C., to McMahon & Cremins, Inc., New York. Consideration for this 22,000-spindle mill is said to have been $374,000. New owners will operate and enlarge. Plant has 500 looms on gray goods.

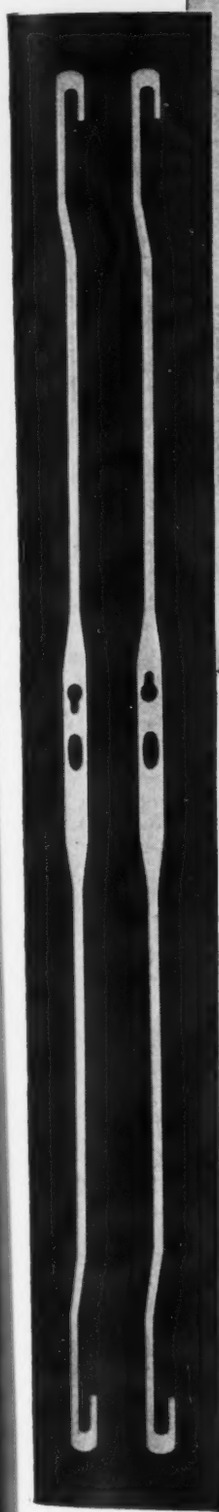
Pepperell Mfg. Co., Fall River, Mass., plans early rebuilding of portion of mill, used for rayon linings and allied specialties, recently damaged by explosion and fire.

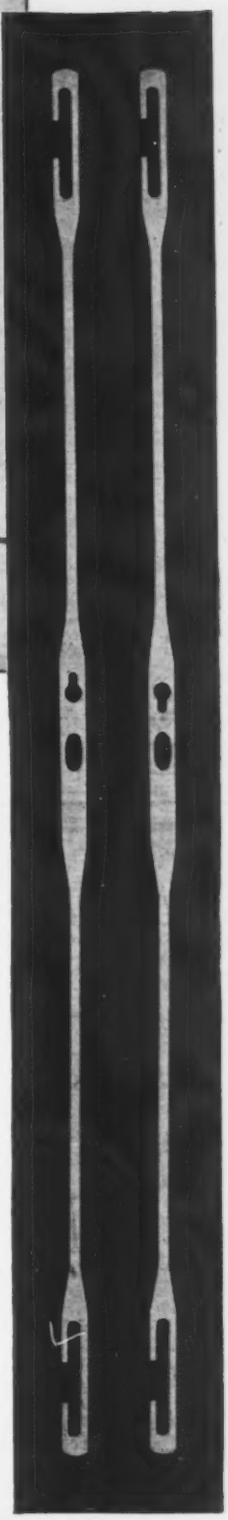
Roswell Mills, Inc., Roswell, Ga., have been acquired by new interests, headed by A. L. Fuller and C. E. Goodroe, which will continue operations.

Southern-Brighton Mills, Shannon, Ga., will begin work soon

NEW BARBER-COLMAN DRAWING-IN MACHINE







NEW FLAT STEEL HEDDLES LEAD THE WAY TO BETTER DRAWING-IN AT LOWER COST

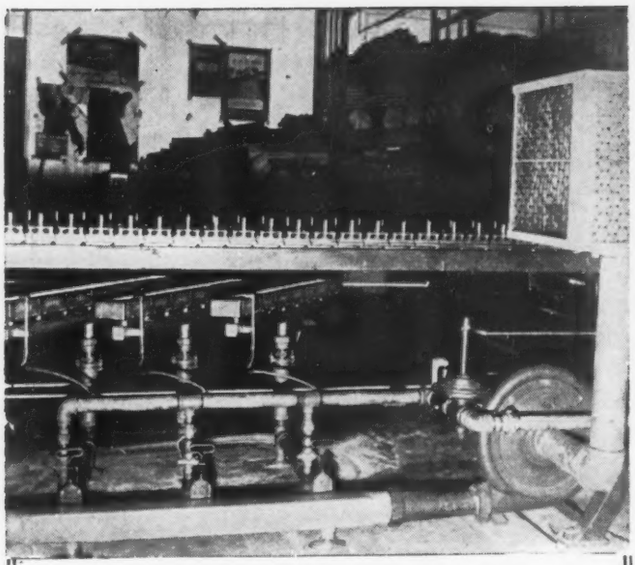
Shown here are two of several types of flat steel heddles developed for the new Barber-Colman Drawing-In Machine. Open ends permit free movement the full length of support bars in the frames and the characteristic key-hole provides for proper alternate selection of successive heddles. We suggest you *start now* to replace your heddle frames progressively with this new type, so as to be in a position to take advantage of drawing-in economies provided by the new Barber-Colman Drawing-In Machine. Thus, by the time you are in position to obtain the machine you will have built up a supply of the necessary heddles which you will find, in the meantime, to be perfectly satisfactory for hand drawing-in. Steel heddle manufacturers are now ready to answer your inquiries concerning this equipment.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND



TYPICAL APPLICATION
OF
RED-RAY BURNERS
ON OPEN TENTER FRAME
HANDLING COTTON GOODS
WRITE FOR COMPLETE DETAILS
RED-RAY MANUFACTURING CO.
455 WEST 45TH STREET, NEW YORK, N. Y.
Canadian Representative:
Rudel Machinery Co., Ltd., 614 St. James St. West, Montreal

Do You Need **PARTS**
for
LOMBARD MACHINES?
or
METALLIC BREASTS?

All machines and parts formerly manufactured by Lombard Machine Co., (with exception of Peralta Machines) including the popular Sample Carding Machine and Metallic Breasts, are now made and serviced by us. This recent acquisition also makes maintenance and service, recovering and repairing of rolls on all Lombard Machines available immediately once more.

DeWALT MACHINE & ENGINEERING CO.
A Worcester Industry Since 1918
27 Sargent St. Worcester, Mass.

on one-story addition to picker room, reported to cost over $75,000, with equipment.

Springs Cotton Mills are about to erect a new bleaching and dyeing plant six miles from Lancaster, S. C., on the banks of the Catawba River. The main building will be 1,000 x 400 ft.

Textron, Inc., New York, has acquired control of the **Nashua Mfg. Co.**, Nashua, N. H., producers of blankets, sheets, and fabrics. Textron, Inc., has purchased at $100 per share more than 75,000 shares of Nashua common stock out of 108,800 shares outstanding. This includes all Nashua stock held by directors of the firm and other large interests. An offer was made to all other shareholders at the same price. Nashua will remain a separate corporation with Robert Amory, of Boston, continuing as president and general manager. Other officers will also be retained as well as the sales and operating forces of all divisions. Nashua was founded under a special act of New Hampshire legislature in 1823 and is said to be the second oldest industrial corporation in the United States. One of its eight brands, "Indian Head" cloth, was first registered in 1831 and is the oldest textile trade mark still in use. Nashua's plants are at Nashua, N. H., Lewiston, Me., and Cordova, Ala.

Valley Lace Co., West Warwick, R. I., will begin work soon on one-story addition, 100 x 215 ft., to cost over $85,000, with equipment. Monohan & Meikle, 255 Main St., Pawtucket, R. I., are architects.

Whitney Cotton Mills, Inc., Hamden, Conn., have begun construction of one-story mill on State St., 50 x 140 ft., for which general contract was recently let to Harlaco, Inc., 201 Front St., New Haven, Conn. Cost reported over $60,000, with equipment.

Wilson Cotton Mills Co., Wilson, N. C., has sold machinery to the Republic Textile Equipment Co. of New York. The equipment includes 600 spindles. It is understood that the machinery has been acquired for setting up in Mexico.

Wool Mill News

Berkshire Carpet Co. has been established in Indian Orchard, Mass., and expects to start operations this month. Walter A. Rice is president, and associated with him are the Goldenberg brothers of the Vernon Rug Mills, which has plants in Taunton, Mass.

Charleston Woolen Co., Charleston, N. H., has acquired Keene Silk Fiber Mills, Inc., and will operate in the future as an affiliated interest.

Hetty Yarn Mill, Inc., 1 Jackson St., Worcester, Mass., has recently been formed with Kathryn T. O'Connell as president, Arthur E. O'Connell, treasurer, and William F. O'Connell, superintendent. Woolen yarns are being manufactured with two sets of cards, and two mule frames of 632 spindles.

Hill Woolen Mills, Inc., newly organized, have purchased the old Pequot Mills property at Montville, Conn.

Leach Textiles, Ltd., and **Spinners, Ltd.**, both Huntingdon, Que., have been purchased by new interests, headed by A. C. Salter, president, Textile Sales, Ltd., Montreal, Que., which will operate them in future. Mill improvements are planned.

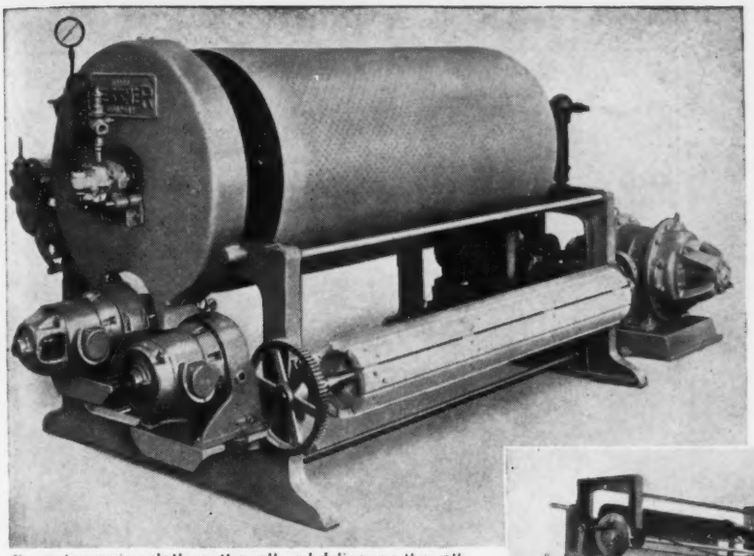
Livingston Worsted Mills, Holyoke, Mass., has sold eight carloads of 25-year-old textile equipment to a mill in Havana, Cuba, and in its place new machinery will be installed.

Middlesex Mills property, Lowell, Mass., has been purchased by J. A. E. Realty Trust Co., composed of James Gilet, operator of the Gilet Carbonizing Co. The Gilet Co., which occupies most of the building space, plans no changes.

Thomas Oakes & Co., Bloomfield, N. J., has been acquired by Jacob Ziskind of Fall River, Mass. No change in operation is contemplated, but it is believed the property will later be offered for resale.

George Park Mfg. Co. mill, Dexter, Me., which was owned by Dumbarton Woolen Mills, is now being operated by Gordon Park, as president and Paul D. Barstow, treasurer and agent. It is under the name of Park & Barstow Inc. The product remains unchanged.

John Perron & Co., Uxbridge, Mass., has recently been formed with John Perron as president



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5. Optional self threading folder to unload cloth in folds, back onto the truck.

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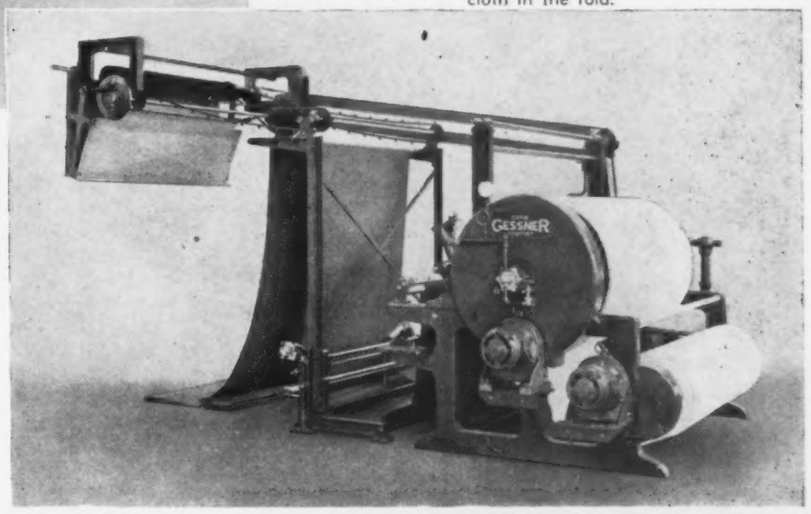

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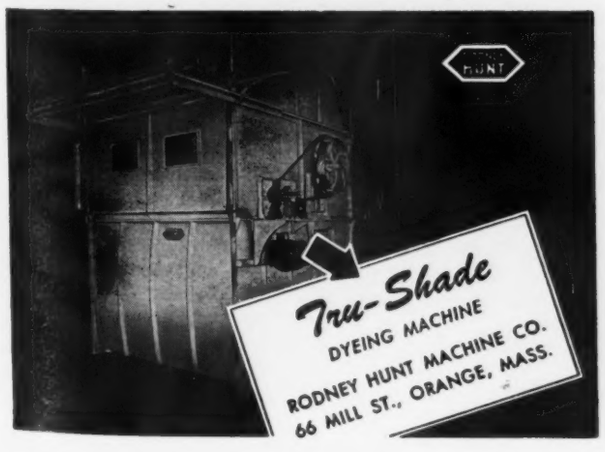

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Elizabeth 3, New Jersey

and Albert Rice as treasurer. They are now in full production making rug filler with four sets of cards.

Uxbridge Worsted Co., Uxbridge, Mass., has begun two-story addition, 125 x 130 ft., for which general contract recently was let to E. J. Cross Co., 150 Prescott St., Worcester, Mass. Cost reported over $100,000, with equipment.

Rayon & Silk Mill News

Allied Textile Manufacturers, Los Angeles, Calif., plans construction of a two-story building, 40 x 104 ft., at 31st St. and Broadway. Plans are in the hands of W. C. Pennell, 823 South New Hampshire Avenue, Los Angeles, architect.

American Viscose Corp., Marcus Hook, Pa., plans new industrial waste treatment plant at local mill. The company has broken ground near Meadville, Pa., for an addition to its No. 2 plant.

Bridgeport Fabrics, Inc., Bridgeport, Conn., has awarded a general contract for a one-story addition to its plant in Danbury, Conn., to cost over $80,000.

Burlington Mills Corp. has leased Steele's Mills, Inc., Rockingham, N. C., for a period of five years, with an option to buy. The step adds 40,000 spindles and 1,000 looms to the Burlington Mills.

Celanese Corp. of America, New York, N. Y., has purchased tract of about 1200 acres near Rock Hill, S. C., as site for new cellulose acetate and rayon yarn mill. Plant will comprise several large one and multi-story units for processing and general production, with power plant, pumping station, office building and miscellaneous structures. Proposed to begin work early in 1946. Cost estimated about $10,000,000.

E. I. du Pont de Nemours & Co., Inc., Nylon Division, Wilmington, Del., has let contract for structural steel framing for addition to mill at Martinsville, Va., to Bethlehem Steel Co., Bethlehem, Pa., and work will begin soon. As previously reported, entire project will represent investment of about $10,000,000.

Gloria Rayon Mills, Johnson City, Tenn. a unit of Burlington Mills Corp. are planning a $60,000 expansion including a one-story addition and new equipment.

Greenwich Mills, East Greenwich, R. I., have been acquired by Verney Corp., Boston, Mass., which will continue operations as a unit in its group of rayon fabric mills, making the seventh such mill operated by company.

Natick Textile Co., Inc., Natick, Mass., plans 1-story mill, about 45 x 125 ft., reported to cost over $60,000 with equipment.

Suntag Fabrics, Inc., New York, which recently leased space in the Grinnell Mills Bldg., Kilburn St., New Bedford, Mass., is installing new looms and will be in operation shortly.

Tennessee - Eastman Corp., Kingsport, Tenn., plans one-story addition, 100 x 130 ft., to cost over $100,000, with equipment. This is part of large expansion and improvement program to be carried out at plant during next 24 months, with total investment close to $10,000,000.

Textron, Inc. has acquired ownership of the mill in Manchester, N. H., which it has occupied for three years on a lease from Amoskeag Industries, Inc. It is a three-story and basement structure with 280,000 sq. ft. floor space. Lowell, Mass., division of Textron has constructed a research laboratory and expended more than $30,000 for various equipment.

United States Rubber Co., New York, has purchased the government-built rayon processing plant at Scottsville, Va., for the sum of $1,837,500. Built in 1944 at a cost of $2,300,000, the plant employs 350 persons and is now turning out rayon cord at the rate of more than 1,900,000 lb. a month.

Knitting Mill News

Augus Mills, Inc., Vass, N. C., which will produce plain knit cotton cloth, have been formed with $50,000 capital stock with the following officers: R. B. P. Forrest, of Philadelphia, president; A. M. Camerron, vice president and manager, who is also manager of the Vass Cotton Mill Co.; and W. W. Forrest, of Philadelphia, treasurer.

Ashboro, N. C.—C. C. Cranford and Ed Cranford, hosiery

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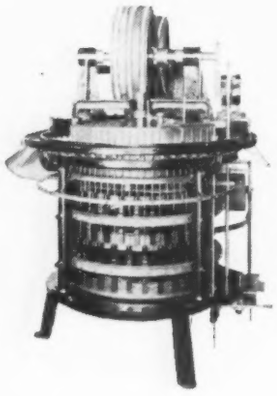

Low cost of upkeep and simplicity are two of the oustanding features of this loom.

We design and build these looms to suit your requirements.

A strictly uniform tension. Automatic stop on all threads.

Complete and adjustable tension of the warp threads while the loom is in motion.

Easy, smooth and light heddle action, which opens the threads so the shuttle may pass freely.

One operator can attend a large number of machines.

This loom is built with 2 or 4 shuttles, giving the highest production possible.

Material and workmanship throughout are the best. It is a high-class weaving machine.

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KENWOOD MILLS

Albany, New York

manufacturers, and Harold D. Cranford, just discharged from the Army Air Forces, have formed a partnership for the manufacture of misses' hosiery and are building a 100 x 200 ft. plant which when completed next spring, will operate 150 Komet circular hosiery machines.

Belvedere Hosiery Co., which plans to build a $250,000 plant at Charlotte, N. C., has been incorporated in North Carolina, for $500,000. The new plant, to be of brick and concrete construction, will be equipped with the latest type of machinery for the manufacture of 51- and 54-gauge full-fashioned hosiery, and it is hoped to have the plant in operation by the middle of 1946.

The House of Byer, a new hosiery manufacturing concern for Lenoir, N. C., occupying temporary quarters in the old country home building there, has begun operations under the management of Leonard J. Byer. The company operates a plant at Cambridge, Mass.

Century Hosiery Corp., Burlington, N. C., has an extension now under construction which will provide over 150,000 sq. ft. of space. The addition to the dye plant will house some of the newest dyeing equipment; there is also additional space for boarding and packaging hosiery.

Dexdale Hosiery Mills, Lansdale, Pa., have begun one-story addition, for which general contract recently was let to Steele, Pownall & Gebhardt, Inc., 1505 Race St., Philadelphia, Pa. Cost reported close to $80,000, with equipment.

Dilworth Hosiery Mills, Charlotte, N. C., have begun erection of one-story mill, for which general contract recently was let to E. G. Foard, 2715 Marston Rd.

Dothan Hosiery Mills, Dothan, Ala., plan expansion and improvements, with installation of additional equipment.

Gastonia Full Fashioned Hosiery Co., Gastonia, N. C., has announced a half-million dollar expansion program which will add 37,000 sq. ft. of floor space to the present building, which already has 10,000 sq. ft. of floor space. The company expects to receive 51-gage full-fashioned and 400-needle seamless machines soon; hopes to have the building completed by May 1.

Green Mountain Knitting Mill, making woolen sweaters and other knit goods, has been opened in Quechee, Vt., by Robert Chapin, former owner of the Kedron Mill in South Woodstock, Vt.

Hugh Grey Hosiery Co. and **Concord Knitting Co.,** Concord, N. C., plan expansion which will provide jobs for approximately 250 additional workers.

Harvelle Hosiery Mills, Asheboro, N. C., has an extensive expansion program under way. Work is going forward on construction of two brick buildings adjacent to the present plant on S. Fayetteville St. Completion of the new units will make possible finishing of the output of the mills, which manufacture infants', misses' and women's anklets. The expansion plans call for the installation of 100 new machines during 1946. Twenty-four of the machines will be the Komet links-and-links machines for misses' anklets. The other machines will be of similar type. Two new offices are also contemplated.

E. P. Herbert Knitting Mill, Inc., Woonsocket, R. I., has begun erection of one-story mill, 125 x 200 ft., with boiler house, at Bellingham, Mass., for which general contract recently was let to Pelletier Construction Co., Woonsocket. Cost over $80,000.

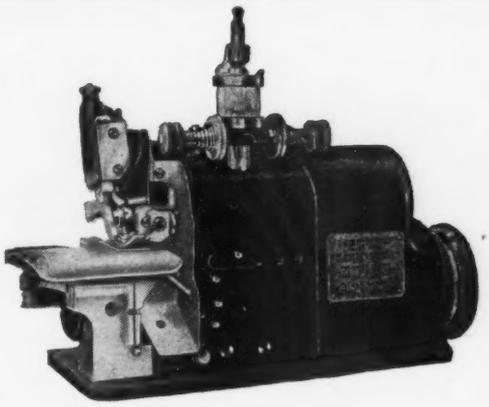
Hornwood Warp Knitting Corp., Wadesboro, N. C., has been formed with capital of $200,000, to operate a local mill. W. B. Moore and L. D. Rivers, both of Wadesboro, are incorporators.

Hub Hosiery Mills, Lowell, Mass., plan alterations and improvements in mill. Arthur England, 7 Central St., Lowell, is architect.

Kingscraft Hosiery Co., which recently moved to a new location at Mint Hill, N. C., plans expansion which includes five full-fashioned machines.

Larkwood Hosiery Co., Charlotte, N. C. (previously reported), is having plans prepared by H. V. Biberstein, Charlotte, engineer, for two-story mill addition. Cost about $200,000.

The Little Hosiery Co., Newton, N. C., will soon be housed in new quarters at Claremont, N. C., where Claude Little, head of the mill, newly organized, has a mill building under construction.



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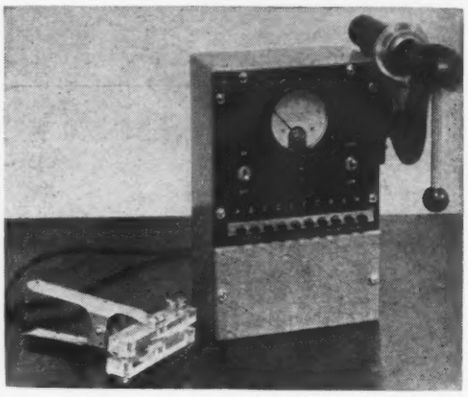

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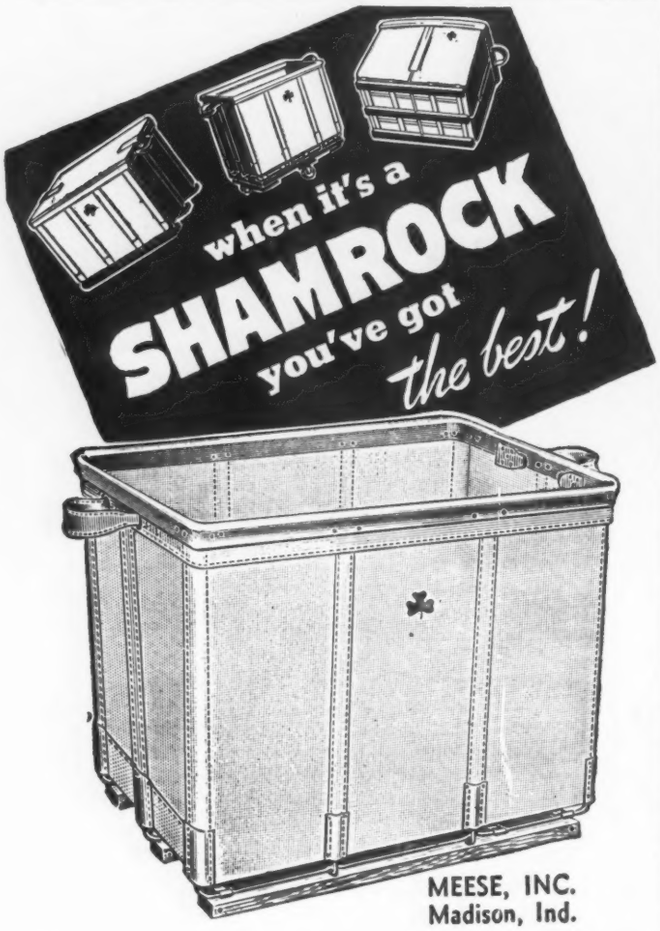


MEESE, INC.
Madison, Ind.

NEWS ABOUT MILLS

McLaurin Hosiery Mills, Asheboro, N. C., will install a number of new Komet circular knitting machines and auxiliary equipment in two-story addition, 121 x 136 ft. (previously reported).

Mission Hosiery Mills, 3764 Broadway Pl., Los Angeles, Calif., have begun erection of one-story addition on 37th Pl., 100 x 150 ft., for which general erection contract recently was let to W. O. Garbe Co.

National Hosiery Mills, Ltd., Hamilton, Ontario, is having a second story addition erected to its dye house on Dundurn St. S., that city. A large addition is planned to the same plant sometime during 1946.

Phoenix Hosiery Co., Milwaukee, Wis., (previosuly reported) has let general contract to Maas Bros. Construction Co., Watertown, Wis., for erection of two-story mill at Beaver Dam, Wis., 80 x 160 ft., to cost about $150,000, with equipment.

Propper-McCallum Hosiery Co., Northampton, Mass., is having plans prepared by Lockwood, Greene Engineers, Inc., New York, N. Y., for one-story addition to hosiery mill at Florence, Mass., 138 x 215 ft., previously reported. Erection contract will be let soon. Cost about $1,000,000, with equipment.

Port City Hosiery Co., Wilmington, N. C., a subsidiary of Mojud Hosiery Mills, is having a $100,000 plant built by Industrial Properties, Inc. Completion of the plant, which will be window-less and air conditioned, is set for June. About 300 Scott & Williams seamless hosiery machines are to be installed, for nylon production.

Ruth Hosiery Mills, Durham, N. C., has been sold to the **Sarah Hosiery Mills,** Mount Airy, N. C., which also owns hosiery mills in High Point, N. C., and Pilot Mountain, N. C.

Resolute Knitting Mills, 257 West Diamond St., Philadelphia, Pa., have plans under way for one-story mill at Smyrna, Del.

Standard Hosiery Mills, Inc., of Alamance, N. C., have begun construction of an addition to its knitting plant, designed to house new knitting machinery, which has already been ordered. The new building will accommodate over 500 knitting machines for the manufacture of men's hosiery. Several hundred 400-needle seamless nylon hosiery machines will also be installed.

Stratford Hosiery Corp., Burlington, N. C., plans a $300,000 expansion program which involves the construction of a new 100 x 218 ft. building for the manufacture of men's and children's hosiery.

Syndicat d'Initiative Industriel, Joliette, Que., will erect a knitting mill in that city at a cost estimated at $40,000. Dr. Georges E. Laporte of Joliette, is president.

West Memphis, Ark.—Inquiries have been received here regarding a suitable site for the Jacobson Hosiery Mills.

Wright's Underwear Co., Troy, N. Y., has been purchased by Wilson Bros. of South Bend, Ind., and Chicago. Carol W. Alton, grandson of one of the founders of Wilson's, will become president of Wright's.

Processing Plant News

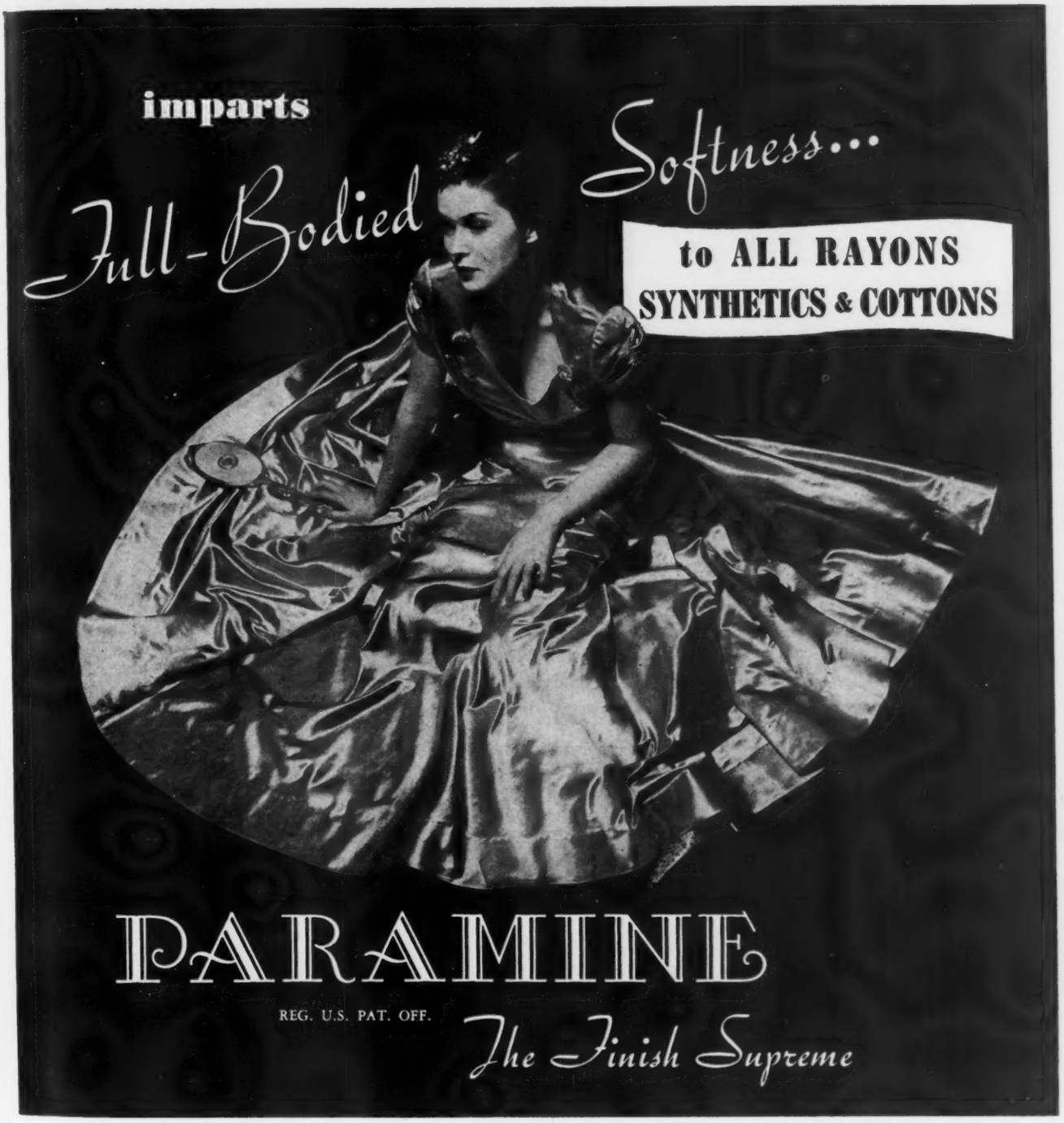
Attleboro Dyeing & Finishing Co. has been incorporated at Providence, R. I., and will soon start operations in its newly acquired plant at North Seekonk, Mass. Manuel O. Castro is president, John B. Cazemiro, vice president, and J. Harry Condon, treasurer. Mr. Castro was formerly superintendent of R. Wolfenden & Sons, Attleboro. Mr. Condon was assistant superintendent. Mr. Cazemiro has been superintendent of the Pawtucket Dyeing & Bleaching Co. plant.

Bedford Novelty Co., New York, has leased the third floor of the Tillotson Textile Mfg. Co. plant in Pittsfield, Mass. The firm specializes in textile printing and will employ 50 to start. It expects a payroll of 200 within a year.

Narragansett Finishing Co. plant, White Rock, Westerly, R. I., has sold its machinery for $48,000 to the Harodite Finishing Co., North Dighton, Mass. The Narragansett Finishing Co. was petitioned into receivership in August, 1945.

Rayon Processing Co., Central Falls, R. I., recently purchased the Woodlawn Finishing Co., Pawtucket, and will install additional machinery for flock dyeing and bleaching of rayons.

E. S. & A. Robinson (Canada), Ltd., Leaside, Ontario, is erecting an addition. This, with other recent additions to this textile converting plant, represents a cost of $600,000.



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Here is a new fastener, the Flex V, for the smaller sizes of V-belts that is going to establish the same outstanding performance record as the Alligator V-belt fastener has already established for the larger sizes of V-belts.

This new Flex V fastener is made in two sizes for A and B section V-belts. It is simple in design, easy to apply and the separable hinge joint makes for quick replacement of V-belts without dismantling shafting or machinery. No metal touches the pulley so Flex V fastened belts can be run on a V-flat drive.

Folder No. V-12 gives complete details on this new Flex V fastener with list prices, special tools and application information. Your request will bring a copy.

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Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts. Alligator V-belt Fasteners for V-belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

NEWS ABOUT *Men*

Gordon Park and **Paul D. Barstow** are now operating the former George Park Mfg. Co., Dexter, Me., under the name of Park & Barstow, Inc. Mr. Park is president and Mr. Barstow is treasurer and agent.

Franklin W. Dorman, who has been serving as a lieutenant commander in the Navy, has been released and has again assumed his duties as president of Dorman Mills, Parson, W. Va.

Samuel Y. Austin, who retired as president of Avondale Mills last summer, is now chairman of the board of Southern Mills, Inc., Atlanta Ga., with branch offices in New York and Chicago.

Ralph M. Jones, president of the Utica Knitting Co., and chairman of the executive committee of the Underwear Institute, has been presented with a War Department Certificate for "patriotic services in a position of trust an responsibility" in the war effort.

Ralph A. Ostberg, formerly of Nashua Mfg. Co. and Saco-Lowell Shops, has become a partner in Rogers & Slade, management consultants, 342 Madison Ave., New York.

Earle Mauldin, Atlanta editor of TEXTILE WORLD, has been elected president of the Georgia Engineering Society for the coming year.

Dr. Harold W. Stiegler has been appointed full-time director of research for the American Association of Textile Chemists & Colorists. He will have his headquarters in the AATCC laboratories, at Lowell Textile Institute, Lowell, Mass.

L. F. Harder, of New York, recently purchased Keene Woolen Mills, Gilsum, N. H., and has changed the name to Gilsum Woolen Mills, Inc.

G. M. Williams, who served during the war in the aircraft industry, has returned to his duties as president of Russell Mfg. Co., Middletown, Conn.

Emanuel J. Weil, for the last six years vice president in charge of all distribution for Archer Hosiery Mills, Columbus, Ga., has resigned.

H. GORDON SMITH, general manager of the Textile Division of United States Rubber Co., New York, who has been elected a vice president of the company.

Christopher C. Baldwin, Jr., who as lieutenant colonel was chief of the Textile Section, Procurement Division, Office of Quartermaster General for the last three years, has been released from active duty, and will return to civilian life as a partner in the firm of Woodward Baldwin & Co., New York.

William L. Dillmuth has been elected vice president of Stehli & Co. New York.

Earnest L. Olrich became president of Rollins Hosiery Mills, Des Moines, Iowa effective Dec. 31, succeeding **Kenneth A. Durham,** who has resigned to enter business for himself. Mr. Olrich is also president of Munsingwear, Inc., Minneapolis which controls Rollins. **E. C. Wilson** will become vice president and sales manager of Rollins, and **John Archer** will become vice president and production manager. Mr. Durham has purchased two of Rollins' women's wear plants at Osceola, Ia., and has formed Snowdon, Inc., an Iowa corporation of which he is president. At the two Osceola plants Mr. Durham's new firm will turn out

CHARLES COOPER CO., INC.
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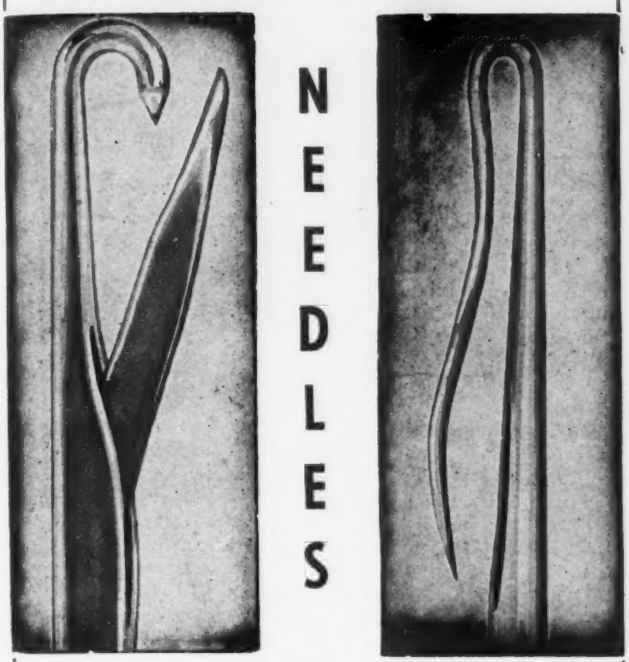
Manufacturers of
Quality LATCH and SPRING-BEARD



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Complete color assortments

American Woolen Company

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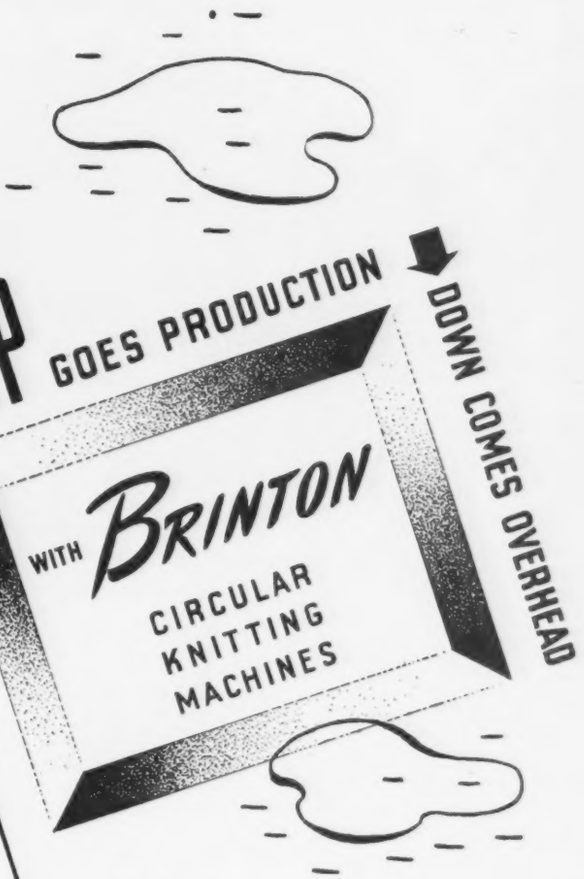

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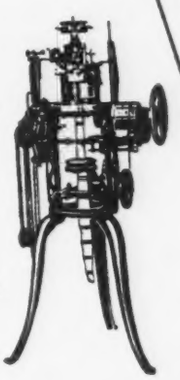

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NOVELTY-YARNS For WEAVERS-KNITTERS

MONTGOMERY

WINDSOR LOCKS, CONN.

Designers and Spinners of Novelty Yarns

women's woven slips and women's knit underwear.

Wm. Murphy, of Savannah, Ga., chairman of the board of the Citizens & Southern National Bank, of Savannah, has been elected a member of the board of directors of Bibb Mfg. Co., Macon, Ga.

Harry L. Bailey, of Wellington Sears Co., New York, who retired at the end of the year, plans to maintain an office for his private affairs at 40 Worth St. in the quarters of Minot, Hooper & Co.

Maurice du Pont Lee, manager of the Rayon Technical Division of E. I. du Pont de Nemours & Co. since 1932 and a pioneer in the development of the company's interests in dyes and synthetic fibers, has been named general consultant in the Engineering Department at Wilmington, Del.

Robert K. Pitman, recently discharged from the U. S. Army Air Forces where he was a lieutenant, has become associated with the Pitman Hosiery Co., headed by his father, **Charles J. Pitman,** in Laconia, N. H.

Al Bleiman, associated for many years with Cohn-Hall-Marx Co., has joined Manville Jenckes Corp., a subsidiary of Textron, Inc., Mr. Bleiman will become vice president and general manager of Manville Fabrics, Inc. a new corporation that will take over the converting operation now handled by Manville Jenckes Corp. He was formerly sales manager and assistant merchandise manager of the printed rayon division of the uptown office of Cohn-Hall-Marx Co.

John M. Hughlett of New York, recently appointed general sales manager of Riverside & Dan River Cotton Mills, Inc., has been made a vice president of the corporation.

Joe L. Lanier has been elected vice president of Dixie Cotton Mills, LaGrange, Ga., a subsidiary of West Point Mfg. Co., West Point, Ga.

Joseph Dognin, will resume his position as vice president and general manager of the United Nets Corp., Central Falls, R. I., after an absence of 2½ years in the service.

Harry Rogosin, who has spent

CHAS. A. KAUFMAN, who has joined Chester H. Roth Co., New York, after 17 years with Julius Kayser & Co.

3½ years in the Army has rejoined Beaunit Mills, Beverly, N. Y., as vice president in charge of all mill production.

Joseph W. Brady, who has been sales director of Dundee Mills, Inc., New York, for the last three years has been promoted to vice president of that company. **W. W. Norman** continues as vice president and secretary. **John H. Cheatham** is president and treasurer. **J. M. Cheatham** is on leave of absence for Naval duty.

John Perron and **Albert Rice** have formed John Perron & Co. in Uxbridge, Mass. The concern will make rug filler. Mr. Perron is president and Mr. Rice is treasurer.

Pedro Cota Nieta and **Rafael Larriva,** Mexican industrialists, have been in New York to buy machinery for a textile plant to be set up in Tiaxcale, Mexico. The plant will specialize in wools and soft cashmeres.

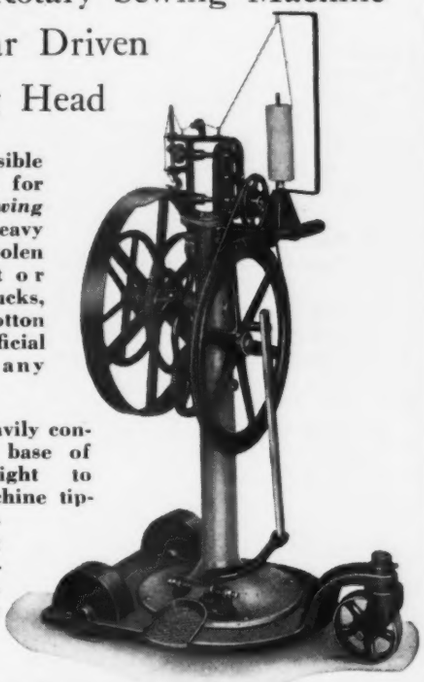
Eldon B. Kieth, who served as a captain with the armed forces, has returned to Walker Top Co., Boston, Mass., in which company he is a partner.

Elmer P. Scott, after 12 years association as treasurer and director of Eddington Fabrics Corp. and Decrotex Co. Inc., affiliates of M. Lowenstien & Sons, New York, has resigned.

Russell Dimery has been appointed chief chemist of Glasgo Finishing Co., Glasgo, Conn. He served two years overseas with the Air Corps.

Stanley P. Hunt has been appointed to the staff of the Insti-

Improved Heavy Duty Foot Power Rotary Sewing Machine With Gear Driven Sewing Head



The best possible machine built for *heavy duty sewing* on light and heavy cotton and woolen goods, wet or dry, cotton ducks, woolen and cotton blankets, artificial leather or any heavy fabrics.

Machine is heavily constructed with base of sufficient weight to avoid the machine tipping, also machine cut gears throughout and rubber tired floor wheels.

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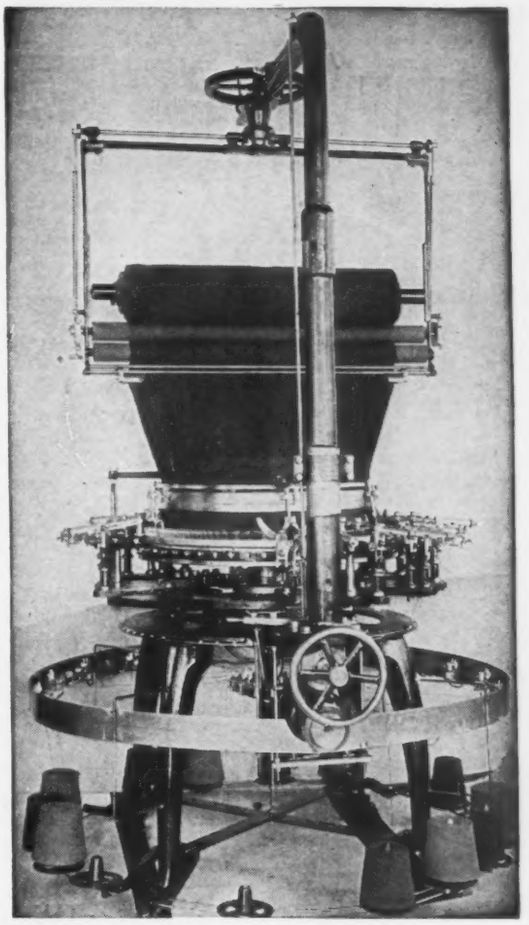

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All reasons that will save you money! The new S-1 single head spring needle machine is especially designed for overcoating materials. At the same time, any fabric can be knit on it that is knit on the older type spring needle table. Production is approximately 100 yards per 8 hour day, using 6 feeds.

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Each button of the electrode is individually spring-cushioned to allow maintenance of contact regardless of contour — no points to break off or injure surface. It is completely portable, and can be operated by anyone.

The same exacting scientific research and precise engineering development that have made L-2 (lumber) and V-2 (veneer) models of Moisture Register the standard in their fields make the new model K-2 an accurate, dependable addition to this famous line. Write today for complete information, specifying type of material and per cent range of moisture content you wish to test.—Moisture Register Co., Dept. G, 133 North Garfield Avenue, Alhambra, California.

Direct reading dial shows moisture content of:
Paper in Stacks or Rolls
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WRITE FOR DETAILS

tute of Textile Technology, Charlottesville, Va., as head of the Mechanical Engineering Division. He has lately been with the Radiation Laboratory of the Massachusetts Institute of Technology.

William C. Miller has been elected treasurer of Industrial Rayon Corp., Cleveland, Ohio. He succeeds D. S. Mallory, treasurer of the company for the last 20 years, who has retired. **George C. Miller II**, who was associated with the New York firm of Miller, Donaldson & Co. as a certified public accountant for six years prior to his enlistment in the Navy in 1941, has been named assistant secretary and assistant treasurer.

E. Owen Fitzsimons has resigned as manager of the Washington office of the Cotton-Textile Institute, New York, in order to devote all of his time to his duties as executive director of the Carded Yarn Association. He transferred his headquarters on Jan. 1 to the association offices in Charlotte, N. C. He joined the institute in 1933 as its Southern field agent.

Frederick Quiltizsch, who resigned his post with the Ware Knitters, Inc., Ware, Mass., over a year ago to organize a plant in Springfield, Mass., has sold the Springfield business and has returned to Ware where he has leased floor space in the Ware Valley Mills for the manufacture of knitted material. Production begins on a small scale immediately.

Fred D. Wood, for the last five years superintendent of Syntex Fabrics, Inc., Williamsport, Pa., resigned Jan. 1. Mr. Wood is one of the organizers of Hornwood Warp Knitting Corp., Wadesboro, N. C.

R. C. Pillsbury, formerly a special agent with Universal Winding Co., Providence, R. I., is now assistant to **Hervey Kent**, treasurer Exeter Mfg. Co., Exeter, N. H.

Melbourne W. Smith, formerly with Spark Mann & Co., public accountants, is now treasurer of Worumbo Mfg. Co., Lisbon Falls, Maine, succeeding **Carl L. Stonach**, resigned.

Robert R. Moore, after more than four years with the armed forces, has returned to Lexington, N. C., where he is associated with his father, **John McD. Moore**, in the operation of the Dacotah Cotton Mills. He was a major in the Army.

James H. Barnhardt, who as a lieutenant has been stationed with the purchasing office of the Army Medical Corps in New York, handling surgical dressings and textiles for the Medical Corps, has been released from the Army and has resumed his duties as assistant secretary and treasurer of the Barnhardt Mfg. Co., Charlotte, N. C.

Edward H. O'Hara, treasurer of Norwich Knitting Co., Norwich, N. Y., recently returned to that concern after five years in the Navy.

Roger J. Rock has resigned as treasurer of Oneita Knitting Mills, Utica, N. Y. He will be succeeded by **Charles B. Wright**. Mr. Rock has been associated with the company and its predecessor for 53 years. He will continue on the board of directors and executive committee.

Llewellyn Harries, for the last two years manager of the Sales Promotion Division of the National Retail Dry Goods Association, New York, will leave that post on Feb. 1 to become vice president in charge of retail services at Abbott Kimball Co., Inc., New York advertising agency.

John Wilmerding has been appointed head of acetate rayon sales of American Viscose Corp., New York. He has recently been discharged from the Navy after serving in the South Pacific since the start of the war.

Lawrence B. Illoway, of Malvern, Pa., a lieutenant colonel has been appointed executive officer of the Procurement Division at the Philadelphia Quartermaster Depot. Colonel Illoway replaces Lt. Col. Robert J. Dillon, who was recently discharged from the service.

Arlen Schoonmaker has been made general manager of Ware Industries, Inc., Ware, Mass. He was recently discharged from the Seabees after serving as a warrant officer in the Pacific theater.

Douglas Grieveson has been appointed retail sales manager of Celanese Co., Inc., the fabric sales division of Celanese Corp. of America, New York. He succeeds **Marshall W. Thompson**, retired.

Thornwell Dunlap, formerly captain in the Army, has ac-

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Oil-base fugitive tints for all synthetic and natural fibers.
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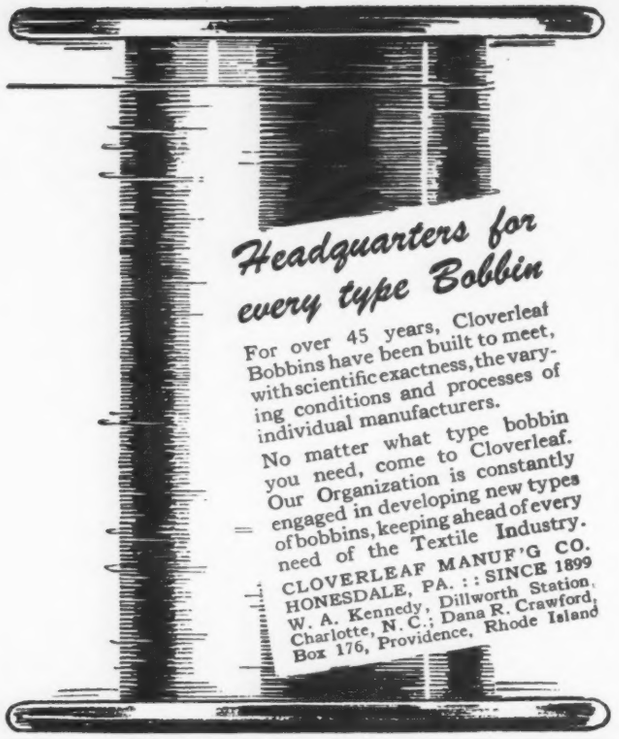
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DEPENDABLE
We build single, double and triple pick counters; yardage, rotary, ratchet and special counters.
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CHARLOTTE, N. C.

NEWS ABOUT MEN

cepted a position in the engineering staff of the Joanna Textile Mills Co., Goldville, S. C.

W. M. Carlisle has been appointed general superintendent of Gossett Mills, Anderson, S. C., succeeding **N. G. Hardie,** who recently resigned to become superintendent of a textile plant at Laurens, S. C. Mr. Carlisle has been with Gossett Mills for eight or more years, and prior to his new appointment was superintendent of the Riverside unit.

Kenneth Merrill, who is now completing his service with the Army, will soon resume his post as manager of the yarn department of William Whitman Co., New York. **George M. Jolly,** Whitman yarn manager during Mr. Merrill's leave of absence, will become associated with Unique Fibers, Inc., in charge of their yarn division.

Albert J. Capalbo has joined the staff of Plasticote Co., Paterson, N. J., textile coaters, in the capacity of chief chemist in charge of production.

Fred S. Gilley, Jr., has opened an office at 158 Summer St., Boston, Mass., to deal in wool and wool products, tops, noils, and wastes, as a broker.

A. Archie Finkelstein has resumed his position as general manager of the Atlantic Knitting Co., Providence, R. I. He entered the Army in 1941, and after serving with the QM School and OQMG in the U.S., served in England with Hq. UK Base as chief of the Supply Division and in France with the Office of the Theater Chief Quartermaster. He held the rank of lieutenant colonel.

Robert L. Richards, formerly assistant manager of the cellophane division of E. I. du Pont de Nemours & Co. has been appointed manager of the nylon division. He succeeds **Charles A. Cary** who was named assistant general manager of the rayon department.

Stephen S. Marks, for 18 years rayon editor of *Daily News Record,* a Fairchild Publication, has been named associate editor, effective Jan. 15, a newly-established post in which he will serve directly under **Harry Riemer,** editor. He is a graduate of Philadelphia Textile Institute. **Harry Jefferies** will become rayon editor.

Kenneth N. Merrill has returned to **William Whitman Co., Inc., New York,** after serving in the Army since 1943. He assumes the position as manager of the yarn division, which distributes the sales yarn production of Arlington Mills, Monomac Spinning Co. and Nonquitt Mills. Mr. Merrill was with the Whitman Company for over 16 years prior to his entering the Army.

G. E. McClellan, manager of the Spruance rayon plant Richmond, Va., of E. I. du Pont de Nemours & Co. for the last four years, has been appointed director of production of the Rayon Division of the company. He replaces **Arlington Kunsman** who was recently promoted to assistant manager of the Cellophane Division.

Robert F. Bender has been appointed controller of the Bigelow-Sanford Carpet Co., Inc., New York. Mr. Bender, formerly controller of John B. Stetson and treasurer of Stetson Hats, Inc., succeeds **Mark Dunnell,** who was recently appointed treasurer of Bigelow-Sanford.

Horace L. Pratt, Jr., was commissioned a second lieutenant in the U.S. Army at Fort Benning, Ga., on Nov. 6, and assigned to duty at Fort McClellan, Ala. Lieutenant Pratt graduated in Textile Engineering at Clemson College and is the son of **Horace L. Pratt,** director of the laboratory of Columbia Mills, Columbus, S. C.

Roy J. Tuthill and **Russell W. Zebold** have joined Seneca Knitting Mills, Inc., Seneca Falls, N. Y. Mr. Tuthill will travel the Eastern territory, and Mr. Zebold will travel the Midwestern and Southwestern territories.

S. Reed Anthony, Maclean Williamson and **C. David Reich,** who have been on military leave, returned to American Viscose Corp. last month. All three men will be connected with the rayon staple fiber sales division, which is located in the company's New York office.

Robert F. Whalen, who has resigned as superintendent of Millard Yarn Co., Ballston Spa, N. Y., to become wool buyer for Ackshand Knitting Co., Ballston Spa.

W. F. Christman has resigned as superintendent of the towel mill of Marshall Field & Co., Fieldale, Va., and will join Sunspun Mfg. Co., Asheboro, N. C.

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BOX 268, PORTLAND, MAINE

Obituary

Eugene Calvin Myrick, 77, widely known textile manufacturer, who retired in 1940, is dead in Troy, N. H. He founded Myrick & Rice, finishers of cotton and wool goods, in Providence, R. I. The firm later became Myrick & Newman, with headquarters in New York. He was president of Brooklyn Textile & Dyeing Corp. and vice president and director of Edgewater Dyeing & Finishing Co.

Solon D. Bausher, 76, past president of National Association of Hosiery Manufacturers, treasurer of Infant Socks, Inc., Reading, Pa., and long prominent in hosiery, died Jan. 9.

Harold R. Lhowe, 57, for many years previous to 1940 executive director of National Knitted Outerwear Association, New York, died Dec. 29.

Charles T. Stowe, 41, secretary and treasurer of Belmont Hosiery Mills, Inc., Belmont, N. C., died Dec. 29.

D. D. Towers, 63, manager of the Anchor Duck Mills, Rome, Ga., died Jan. 1.

Robert Lane Cumnock, 90, former president of the Altavista Cotton Mills, Altavista, Va., and a prominent figure in the textile industry for many years, died Nov. 24.

J. J. Reuthlinger, manager of the rayon weaving plant of Cia Peruana de Tejidos "Sedasol" S.A., affiliate of Wessal, Duval & Co., Inc., died in Lima, Peru, recently. He was the first president of the American Association of Textile Technologists.

Frederick N. Belding, 58, former vice-president of Belding Heminway Co. died recently in Hartford, Conn.

Percy E. Sheldon, 64, head of the Boston wool house of Sheldon & Co., died Dec. 4. He was a native of Milton, Mass., and entered the wool business in 1904. In 1933 he was president of the Boston Wool Trade Association.

David L. Punch, president and treasurer of the Lion Yarn Co., Manchester, N. H., died in that city recently.

Miss Delia A. Russell, of Springfield, Mass., who with two sisters had for many years operated Russell Knitting Works in Springfield and Chicopee, Mass., died recently.

Lewis T. Shurtleff, 83, of Fairhaven, Mass. died recently. He was associated with the Pairpoint Corp. for 27 years, and later was sales representative of the Sunoca Co.

Bernard Duffy, 75, vice president of Duffy Silk Company, Buffalo, N. Y., died at his winter home in Beverly Hills, Cal.

Francis J. Byrne, 67, former assistant director of public relations department of E. I. du Pont de Nemours & Co. died Nov. 18 in Wilmington, Del.

Anselm A. Stein, 48, production manager for Real Silk Hosiery Mills, Inc., Indianapolis, died recently in a Chicago hotel. He had been with the company for 20 years.

Ivan B. Scovill, 75, vice president of Industrial Tape Mills Co., Philadelphia, Pa., for 40 years died Nov. 27.

Elmer V. Smith, 54, agent for the Carivan Spinning Co., West Warwick, R. I., died recently at Fiskeville, R. I.

William B. Laughheed, 79, retired textile executive died at Stafford, Conn. recently. He had been an official of the Niantic Mfg. Co., East Lyme, and of the Riverside Woolen Co., Stafford, Conn.

Morrell H. Hayman, 57, for 17 years St. Louis branch manager for Stein, Hall & Co., Inc., New York, died in Webster Groves, Mo., Nov. 29.

Clarence H. Slaughter, of Greensboro, N. C., where he had been connected with the Burlington Mills Corp., died in Mexico City, Mexico, recently.

Frank H. Frissell, 74, president of Frissell Fabric Co., Middletown, Conn., since its inception in 1920, died last month. He was a graduate of Philadelphia Textile Institute and at one time an executive of the Russell Mfg. Co.

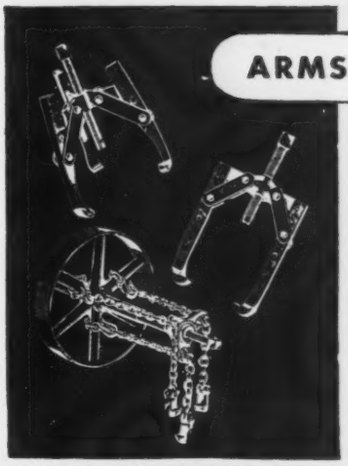
John Graham Melville, 56, a partner in Melville Woolen Co., Sykesville, Md., died recently at his home, Melville, Md.

FINISHING OR DYEING PRODUCTION MAN

We have an opening for a man who has had experience in the finishing or dyeing field. He is either a foreman, or has the qualifications for a foreman. He may be presently employed in a cotton mill or textile plant. This is a wonderful opportunity to work into a splendid position. Excellent opportunity for advancement. Ideal working conditions in modern, well-equipped plant. Write fully, giving background and experience. All correspondence will be treated confidentially.

WRITE PERSONNEL DEPARTMENT

AMERICAN FINISHING COMPANY
Memphis, Tenn.



ARMSTRONG-BRAY

GEAR AND WHEEL PULLERS
Prompt Shipment

Save hours of time, prevent costly breakage and long shut-downs.

STEELGRIP Standard Rigid Arm Gear and Wheel Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 34 types and sizes.

CHAINGRIP Universal Pullers pull wheels, solid gears, pinions, etc., even at considerable distance from end of shaft. Proof-tested chains have both chain hooks and special pulley hooks. 3-ton and 12-ton capacities.

Write for Catalog Sheets

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5340 Northwest Highway
Chicago 30, U.S.A.

NEW ZEPHYR "HYDRAXTOR"
the Extractor of the Future

WE'VE LEARNED A LOT IN OUR 50 YEARS

50 years of specialized experience in producing tanks and tubs for the textile industry *has taught us some things that will be valuable to you!*

Let us tell you about our complete Caldwell service, which includes Stainless Steel-lined tanks and tubs—round, rectangular and special shapes. *Catalog on request.*

W. E. CALDWELL CO.
INCORPORATED
2060 Brook St. Louisville, Ky.

Caldwell TANKS AND TOWERS

POSITIONS VACANT

KNITTER AND Mechanic thoroughly experienced all types flat full automatic knitting machines. Able to knit in test and set up. Salary and bonus, opportunity. Apply Ainslie Knitting Machine Co., Inc., 750 Grand Street, Brooklyn, N. Y.

WANTED WORSTED Plant Manager and Designer—piece-dyed men's and women's wear—100 looms—mill situated in Canada. State technical and moral qualifications. Knowledge French language, salary wanted. P-525, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Additional Position Vacant ads on page 238)

POSITIONS WANTED

BOSS FINISHER on knitted fabrics of every description available. Excellent references. PW-527, Textile World, 330 W. 42nd St., New York 18, N. Y.

WOOLEN MILL Superintendent and designer desires position with first class mill. 20 years practical experience in the woolen industry. Well versed on manufacturing all types of woolen clothes, (Men's & Ladies' Wear, blankets). PW-528, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

(Continued on page 238)

SEARCHLIGHT SECTION

WANTED

Production Manager

South Carolina cotton rug manufacturer has opening for dynamic production director; must be capable running entire operation on his own; the man we are seeking is a top flight personnel man, possesses the ability to think and act creatively and has the 'know-how' to do an effective mass production job; compensation will be based on performance; write full details, age, education, complete experience picture; all information will be held confidential.

P-472, Textile World
330 West 42nd St., New York 18, N. Y.

Woolen Textile Mill Opportunities

Unusual chances in New York State plant for young men trained in textiles. Following openings available. Textile Engineer, Spinning Supervisor, Assistant Supervisor in Carding and Weaving Departments. Card fixer also wanted. Give full details with applications.

P-507, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE

INDUSTRIAL ENGINEER

AVAILABLE

Formerly chief industrial engineer in large well known eastern woolen mill. Thoroughly familiar with standard costs, production control, motion and time study, methods improvements, job evaluation and man rating, safety; especially in wool, silk and rayon.

PW-522, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

EXECUTIVE ASSISTANT

Young Veteran—Textile or Engineering Education 3-5 years actual textile mill experience, proven ability, initiative and desire to accept responsibility. Write

P-509, Textile World
330 West 42nd St., New York 18, N. Y.

Mechanic Experienced Scott & Williams Rib Machines. Highest Wages. Steady Work. Write Stating Experience.

P-477, Textile World
330 West. 42nd St., New York 18, N. Y.

POSITIONS WANTED
(Continued from page 237)

A POTENTIAL MANAGER for your business: Young man (33) factory-trained in both minor and major operating and plant positions ranging through individual, shop and plant responsibilities, supplemented by highly commended executive duties as a Commander in U. S. Navy, is available for immediate employment to learn your business; assistant or junior capacity. College man; also Harvard Business School graduate; married; energetic and confident of his ability to meet all essential requirements. Detailed experience record and other specific information available to interested executives as a preliminary to further consideration. PW-526, Textile World, 330 W. 42nd St., New York 18, N. Y.

WEAVING EXECUTIVE: Experienced on plain and fancy yarn, piece dyed goods, in silk, rayon, nylon, cotton, mohair and blended yarns on broad goods and pile fabrics, expert knowledge of automatic looms, wants steady position with reliable firm. PW-529, Textile World, 330 W. 42nd St., New York 18, N. Y.

THROWSTER OF many years experience in throwing silk, rayon crepe, hosiery yarn and a variety of yarns for the embroidery and underwear trade, desires connection with a reputable concern. PW-530, Textile World, 330 W. 42nd St., New York 18, N. Y.

(AVAILABLE)

Superintendent—Ass't Manager

Veteran, thoroughly familiar with all phases of woven, braided and knitted fabric manufacture, would like to make a new connection on his return from Europe. Textile school graduate with 20 years experience in narrow fabric field, both elastic and non-elastic. Age 37, married.

PW-508, Textile World
520 North Michigan Ave., Chicago 11, Ill.

AVAILABLE

Manager-superintendent, highly capable with excellent record and thorough knowledge of woolens, worsteds and knit goods. Textile education, handle all types of equipment, fabrics, and finishes from the selection of fiber through finishing operations. Conduct mill surveys, development and research work, consulting and advisory capacities. Am Married.

PW-510, Textile World
330 West 42nd St., New York 18, N. Y.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorney

Booklet—"General Information Concerning Inventions & Patents" and "Fee Schedules" sent without obligation.

Patents—Copyrights—Trade-Marks
Suite 448, 815—15th St., N.W., Washington 5, D.C.

MODERN ENGINEERING CORPORATION
Consulting Engineers

Industrial Power Surveys—Electric, Steam, Water, Air Layouts—Heating & Ventilating—Special Electric Circuits—Plant Modernization—Reconversion & Alterations — Power Surveys — Investigations & Reports.

SEND FOR PROSPECTUS
154 Nassau St. New York, N. Y.

SEYMOUR C. HYMAN, Chem. Eng.
Consultant for Industry on
MOISTURE AND FUNGUS PROBLEMS

For the duration of the war, Chief of Moisture and Fungus Proofing Section developing and applying tropic-proof materials for U. S. Army communications equipment. Now available to manufacturers and materials suppliers for consultation on protective coatings, insulation and choice of engineering materials.

P.O. Box 111 Long Branch, N. J.

WANTED
Seaming & Looping
FIXER

Excellent opening for experienced man

Permanent job with good salary

Write P-487, Textile World
520 North Michigan Ave., Chicago 11, Ill.

WANTED

Experienced fixers who know 400 N. S. & W. Spiral machines and can train operators. Union shop. Good working conditions. Well established mill with nation wide business.

P-488, Textile World
520 North Michigan Ave., Chicago 11, Ill.

MALE HELP WANTED

Mechanic Experienced Wildman Spring Needle Machines. Highest Wages. Steady Work. Write Stating Experience.

P-476, Textile World
330 West. 42nd St., New York 18, N. Y.

POSITION VACANT
SALESMAN—TECHNICIAN

To call on textile mills to sell and demonstrate chemical products. Must be familiar with manufacture and finishing of cotton and mixed goods. Prefer chemical or chemical engineering training or graduate of textile school. Salary would depend on qulifications and experience. State full particulars as to age, family status, education and experience.

SW-505, Textile World,
330 West 42nd St., New York 18, N. Y.

AGENCY FOR
Scandinavia or Denmark

An energetic and originative young Danish businessman in the textile trade, owner of a good and well-reputed firm in Copenhagen, seeks representation for textile goods, ready-made clothing, blankets, Persian rugs and carpets, etc.

The firm is well connected with all important houses in Scandinavia, and new articles could be guaranteed a large sale.

The firm is prepared either to work on a commission basis, or to buy the articles for their own account.

Please address details and samples to

MESSRS BERNT EPPERS
Studeistraede 65, Copenhagen V.

MEXICO

Mexican firm well connected with textile mills is interested in the representation of textile machine factory and accessories. Reply to:

RA-462, Textile World
330 West 42nd St., New York 18, N. Y.

BE PREPARED
for
NEW EXPORT SALES
Wanted Textile Agencies

Well connected and old established Manufacturers Agents having unrivalled connections with wholesale warehouses in Great Britain are prepared to accept representation of first class Manufacturers of Men's, Women's and Children Hosiery underwear and General Textiles.

C. CLUTTEN & SON
Textile Exchange Buildings
St. Paul's Churchyard, London, E. C. 4

ARE YOU INTERESTED IN SOUTHERN REPRESENTATION?

On or before February 1st, will be interested in 2 or 3 non-conflicting accounts. Have many worthwhile contacts, Virginia, North and South Carolina, Georgia and Alabama. Spinning, weaving and throwing-cotton, rayon and wool processes. Many years successful sales record. Can furnish bank, customer individual and industrial references.

RA-518, Textile World
330 West 42nd St., New York 18, N. Y.

CHEMISTS

Active, Confidential Service Both To Employer and Employees
We Invite Your Investigation
MISS GLADYS HUNTING—Counselor
Shay Employment Agency
30 W. Washington Chicago 2, Ill.

BRAZIL

Reliable sales organization would like to start negotiations as representatives of manufacturers and exporters in textile machinery and parts.

Best references. Please write to
INTER COMERCIAL E INDUSTRIAL LTDA.
Caixa Postal 52 Sao Paulo, Brazil

Over Forty-five Years of Dependable and Confidential EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.
Phone: Liberty 6547 294 WASHINGTON STREET, BOSTON 8, MASS.

SEARCHLIGHT SECTION

COTTON YARN ACCOUNT WANTED

Reputable Selling Agent with a first class clientele amongst the knitting and weaving trades and a proven record of many years of successful accomplishment seeks selling connection with first class cotton yarn spinners making all classes of weaving and knitting yarns, especially fine combed peeler, also cotton spun worsted and wool blend yarns — in all types of packaging with particular reference to modern developments in the industry. References gladly exchanged under mutually proper circumstances.

RA-515, Textile World
330 West 42nd St., New York 18, N. Y.

ASK YOURSELF FRANKLY "WILL IT PAY TO SELL MY BUSINESS?'

TODAY'S unusual industrial conditions may well justify you in turning your business—FOR CASH—to new management. As a reputable operating organization of long experience, with substantial capital, we can bring opportunity for increased company expansion and greater profits . . . while you are relieved of heavy expense and worry. Personnel held intact whenever possible.

● *ALL discussions and negotiations strictly confidential*

Box 1222—1474 Bway, N. Y.

WANTED

Spinning Mill

Producing spun rayon yarn. Will purchase going plant or buy interest. Can supply staple. Prefer present management remain. Submit full particulars in first letter.

BO-517, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
Surplus
Chemicals, Dyes, Gums, Oils, Waxes, Greases, Pigments, Residues, By-Products, Wastes
W-270, Textile World
330 West 42nd St., New York 18, N. Y.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.

WANTED

Rayon Weaving Mill

Up to 125 Looms

Address Replies To

W-445, Textile World
330 West 42nd St., New York 18, N. Y.

MILL WITH COMPLETE WEAVING, PIECE-DYEING, AND FINISHING

for 36" woolen fabrics; requires supply of warp, and filling yarns, from reliable source. Looking for outside carding and spinning facilities if available.

MEDFORD-MARLBORO KNIT GAITER, INC.
Marlboro, New Hampshire

WANTED

20—4x1 Automatic bobbin changing woollen Looms, 72" to 76" reed space, with multipliers, dobbie or gem head, dobbie head preferred and arranged for individual motor drive.

W-519, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
10 and 12 inch
Circular Knitting Machines,
Automatic to make Snuggies IXI—tuck stitch 11 to 12 cut preferred

W-516, Textile World
330 West 42nd St., New York 18, N. Y.

If you have any 66"—4/4

AUTOMATIC LOOMS

Idle and auxiliary machinery, we can put them to work with our own yarns, under our own supervision on a per diem or yardage basis.

CW-511, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

10 to 12 Fletcher Ribbon Looms

With drop weights or automatic let-offs Castle type

ROBERTS, CUSHMAN & COMPANY
10 Washington Place New York 3, N. Y.

FOREIGN MILL OWNERS

In buying Used American Made Textile Machinery, you need protection and advice that you can depend on. We are thoroughly experienced practical textile mill men that know our business.

We are not Machinery Dealers. Through our many sources, we will obtain for you the exact equipment to meet your requirements.

We do not deal direct, but through reputable Exporters. We can supply you with the names of these Exporters, with top Dun & Bradstreet Ratings, and you can be assured that they will protect your interests in every way.

LAWRENCE H. KELLY
Textile Machinery Consultants
P. O. Box 2442
Paterson, New Jersey, U. S. A.

Can you spin for us?

We need 4/14s—2/15s—2/20s

Worsted Yarns on the Bradford System.

CW-520, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

300 and 500 lbs. Housong dye pots and cages for raw stock dyeing. Also, 1000 lbs. automatic wool baler. Also, large exhaust fans. Apply

W-437, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED COMMISSION DYEING

Have additional facilities for 10,000 to 15,000 lbs. weekly for raw stock dyeing. Can make good deliveries.—Apply

CW-433, Textile World
330 West 42nd St., New York 18, N. Y.

Coal Unloading Conveyor

WANTED

State condition, size, kind of power and price—

W-524, Textile World
330 West 42nd St., New York 18, N. Y.

YARNS WANTED

Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

W-474, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
(One only Jacquard)
CARD-CUTTING MACHINE

treadle or power operated, to handle size 600 cards, French Index. Either new machine or used machine in good condition.

CALDWELL LINEN MILLS LTD.
Iroquois, Ontario, Canada

FOR SALE

Four Proctor & Schwartz automatic hosiery boarding machines equipped with aluminum forms for boarding women's hosiery.

FS-470, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

WORSTED SPINNING PLANT

also equipment

Write details, price, delivery date, etc.

ROSENTHAL EXPORT CO.
530 Broadway New York 12, N. Y.

WANTED

Nylon Sizing Equipment Universal or Foster, require from 75 to 100 spindles.

W-496, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

2—8 Spindle or 10 Spindle 14x7 Open drawing Boxes
1—8 Spindle 14x8 Open drawing Box
2—60 Spindle 10x5 Cone Reducers
1—8 or 10 Spindle 14x9 Cone drawing Box

Please address communications to
HOWARD IMPORT & EXPORT CO.
10 West 33rd Street New York, N. Y.

(Additional Equipment Wanted Advertisements on page 240)

WANT TO BUY

TEXTILE ROLLER PRINTING PLANT

Having 3 to 10 machines, also dyeing and finishing equipment capable of producing up to 2,000 pieces per day of rayon, cotton and mixtures.

This is the principal advertising. Replies held STRICTLY CONFIDENTIAL.

W-521, Textile World, 330 West 42nd St., New York 18, N. Y.

Memo: **To: Executives of Dyeing, Finishing and Bleaching Plants**

As the country's largest dealers catering exclusively to the dyeing and finishing industry—we are in a unique position to offer highest possible prices on single items or complete units which you may have for sale.

A note to us, at the address below, or a phone call, will bring an authorized representative to your plant promptly.

ADVANCE MACHINERY CO., INC.

Textile Dyeing, Finishing and Printing Machinery

179-197 EAST 7TH STREET PATERSON 4, N. J.

Telephone ARmory 4-7068, 4-7069

INTERESTED IN

Jute Garnett Machine Also Needle Machine

To Punch Jute Felt on Burlap

W-512, Textile World

330 W. 42nd St., New York 18, N. Y.

WANTED

One only 250 lb or Smaller

FRANKLIN RAW STOCK DYEING MACHINE

or Equivalent

STAINLESS STEEL OR IRON

T. S. SIMMS & CO. LTD.

Saint John, New Brunswick

Canada

WANTED TO BUY

1—Three Roll Calender—60" or wider
6—Universal Winders—Model 6-C
1—Lazenby Cop Winder—20 to 30 spindles—for winding paper

Please give complete data, prices and when equipment may be inspected. Write

W-465, Textile World
330 West. 42nd St., New York 18, N. Y.

WANTED

EQUIPMENT

New Or Used Or

COMPLETE PLANTS

For a Woolen Spinning Plant for the manufacture of tweed yarn from Indian Wool. Production of 1,000 lbs. in 9 hours. Equipment to include Woolen Mules, Condensing Cards, Mixer, Opener, and Garnetts for woolen yarns and rags.

Also for a plant for the manufacture of hand-knitting wool yarn up to 4-ply from tops, with production of 1,000 lbs. in 9 hours.

Submit catalogs, lists, descriptions, and prices to

Model Woollen & Silk Mills
Kalianwala Bldg., Kaulsar, Amritsar, India

WILL BUY OR RENT

TEXTILE MILL

About 400 - 500 looms with yarn position

Capable producing lining fabric economically.

W-513, Textile World

330 West 42nd St., New York 18 N. Y.

WANTED

MODEL E DRAPER LOOMS

Reed Space 25" to 32"

Write

MEREDITH LINEN MILLS, INC.
Meredith, N. H.

WANTED

2 WOOLEN OR WORSTED CARDS

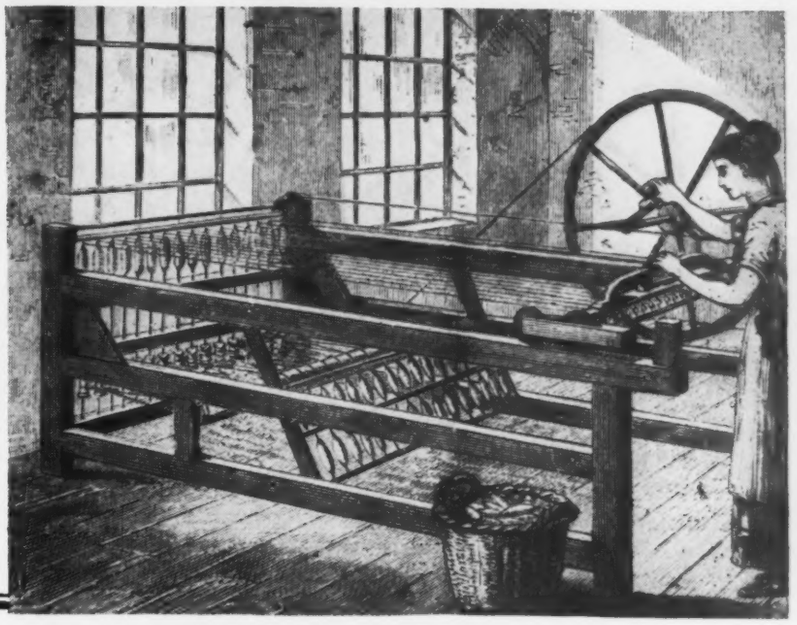
60-Inch Diameter—60-Inch Face
All Metal

W-489, Textile World
330 West 42nd St., New York 18, N. Y.

The Spinning Jenny —named after a child....

JAMES HARGREAVES, a poor weaver, conceived the idea of the "spinning jenny" when his small daughter Jenny upset a one-thread spinning wheel, which continued to revolve and spin—and he named his finished machine, patented in 1770, after her. It did eight times the work of one person; and was a potent factor in the subsequent development of the textile industry.

Illustration from the Bettman Archive



SERVING THE TEXTILE INDUSTRY

1—114" Simpson Batcher
2—#00 Sturtevant Blowers, paddle type, band driven
1—66½" C & M Brushing Machine
3—2-46", 1-50" Button Breakers
1—18" Breast Card, with Cyl. 6 rolls
1—66" Hartman Card, 2 Cyl. iron card set with tape condenser and feeder, no clothing
1—42" Granger Calendar, 3 roll, motor driven
8—Whitin Model C Combers
1—Whitin Model C Ribbon Lapper
1—Whitin Model C Sliver Lapper
1—Whitin Ribbon Lapper
1—Whitin Sliver Lapper
4—18" P&W Doubling, Boarding & Winding Doublers
1—56" P&W Doubling & Winding Machine, Rebuilt, with 100 yd. Counter, motor driven
1—65" P&W Doubling & Winding Machine, Rebuilt, with 100 yd. Counter, motor driven
2—80" P&W Doubling Winding & Measuring. Belt Driven
1—84" P&W Doubling Winding & Measuring. Belt Driven
1—72" Schofield Automatic Duster, no apron, no fan
1—26" Tolhurst Extractor. Belt Driven. Overhauled
1—30" American Laundry Extractor, Copper Tinned Basket, Belt Driven, Under Drive
1—10" Cleveland Extractor, Self-balancing, Copper Basket, Top Pulley Drive
1—60" Broadbent Extractor, Self-balancing, Copper Basket, Belt Driven
1—Narrow Fabric 5 Can Van Vlaanderen Finishing Machine with Taylor Instruments
14—40", 42", 46", 48", 100" C&M and E&H Folding Machines
7—Hunter and Schiffer 2 String Fulling Mills
1—48" S&F Single Cylinder Garnett, 20" dia. Cyl. 16" Doffer, Gear Driven
13—40", 45", 52", 54", 56", 90" Card & Napper Grinders with and without Floor Stands
1—124" Roy Napper Grinder
2—Belt Lacing Peerless Machines
1—Card Lacing Singer Machine ½ H.P. GE Ind. Motor
1—48" C&K 4x4 Box Loom
6—76" Draper Modified D Automatic Looms with Lacey tops, Belt Driven, equipped with Midget Feelers, Friction Let Off, Warp Stop Motions and 1½ Beams per Loom

FOR SALE

Complete Wool Scouring & Carbonizing Plant

including

1—40" 2-Cyl. Wool Opener.
2—Units of Dusters, each with automatic feeder and two cone dusters connected in tandem.
1—48" Sargent 4-bowl wool scourer with Automatic feeder. Bowls 32', 24', 20' & 20' long.
1—48" Hunter 4-bowl wool scourer, with automatic feeder. Bowls 32', 24', 16' & 24' long.
2—80 ft. Philadelphia Textile Machinery Co. Stock Dryers, each with automatic feeder and ten circulating fans.
1—48" 2-bowl carbonizer with automatic feeder. Bowls wood 36' & 20' long.
1—Crush Roll and Dusting Unit consisting of Automatic feeder, crush rolls, cone duster, crush rolls and Belgian Duster in tandem.
2—Bagging Machines, Sargent & Dodge.
1—Hydraulic Baling Press.
1—Permutit Water Softener.

Also Miscellaneous Belt Conveyors, Blowers, Ducts, Spare parts, trucks, etc.

10—82" C&K 4x4 Box Looms, 25 Harness, Belt Driven
6—96" Knowles 4x4 Box Looms, 25 Harness, Intermediate Head, Belt Driven, T&L Pulley & F. C. Drives
1—42" C&M Measuring Machine, 60 yd. Dial. Belt Driven
1—58" C. Blake Measuring Machine, Sanded Roll Fabric Measuring, Inspecting & Winding Machine with yardage dial, tuber and collapsible roll-up attachment, motor drive

1—D&F Napper 20 roll single acting Napper, Belt Driven
1—18" Butterworth Rag Picker
1—40" Parkhurst Burr Picker
9—65½", 66", 80" and 84" Voelker and Gessner single & double bed rotary cloth Presses
1—86" x 42½" Cleveland Reel Warp
1—60" C&M Single Blade Shear, Plush, arranged for motor drive, no motor
2—66½" P&W Single Blade Shears, Belt Driven
1—66" C&M 2-Blade Shear, Belt Driven
12—66" P&W 2-Blade Shears, Belt Driven, Model B
3—66" P&W 2-Blade Shears, Belt Driven, Model A
1—72" Montsforte 2-Blade Shear
1—106" Schulze Double Shear
1—42" C&M Singer with Hood
2—204 Sp. Lowell 2¼" R, 3" Ga. Spinners, Band Driven, Warp Wind
1—32" D&F Jack Spooler
1—100 Sp. Draper Spooler with Foster Tension, McCall Guide
1—60" C&M Single Brush Tiger, arranged for Motor Drive, no motor
1—200 Sp. Lowell Trap Twister, 3½" Ring, 5" Ga. arranged for Chain Motor Drive, no motor
1—200 Sp. Draper Twister Tape Dr. 2¼" Ring, 3½" Ga.
6—100 Sp. Saco-Lowell and Lowell Trap Twisters, 3½" Ring, 5" Ga. arranged for Chain Motor Drive, no motor
1—Washing Tub Agitator with motor
2—54" Entwistle Warpers
8—82", 87", 92", 100" D&F Warpers with Creel Beamer and Reed Stand
1—Card Clothing Winch
1—46" Winding, Boarding and Tubing Machine
1—54" P&W Winding and Measuring Machine with 100 yd. Clock with Motor
2—58" P&W Winders, Edge, Stenciling & Winding
1—64" P&W Woolen Cloth Winder and Measuring Machine
2—Yarn Conditioning Machines, Sargent
1—#15533 Reeves Drive, Size 6, Class G, Range 3 to 1
1—#16653 Reeves Drive, Size 3, Class A, Range 10 to 1
Quantity of Mule Bobbins and Various Size Twister Bobbins and Wooden Spools
1—100 yd. Heathcote Dryer, 66" opening, return tenter drive with electric guides, motor driven

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

EST. 1923

31-33 West 42nd Street NEW YORK 18, N. Y.

DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

Why McDOWELL ASSOCIATES for Buying or Selling Textile Machinery?

BECAUSE THEY HAVE THE EXPERIENCE..THE ORGANIZATION THE CONTACTS..AND THE STOCK

Partial List only—

DYEING AND FINISHING

1—Brush, McCreery, 54" 2 rl w/blower
1—Brush, Vertical, 62", 6 rls.
1—Brush, 9 rl 48" w/2 beaters & 2 emery rls.
1—Button breaker 50"
1—Calender 42" friction, 3 rls.
1—Calender 50", cotton, 3 rls.
1—Calender 80", 6 Bowls, 3 heated brass, 3 cotton.
1—Calender, 80", hydraulic, 7 rls.
1—Can Dryer 144" 4 stacks, 9 cans ea stack complete w/motor & drive
1—Decatur 72" complete w/pump
1—Decatur, Semi, 72" w/pump & motor
1—Dewing & Dampening unit 63"
5—Doublers, 40" to 60"
1—Dryer, Knit Goods Drum type, w/additional carbonizing section
2—Dryers, Loop, 50" & 84" w/housing
1—Dryer, raw stock, approx. 200-lb.
1—Dryer, cloth & blanket, 80"
1—Dryer, one section, rotary tenter
1—Dyeing unit, skein, 28 arms, complete
3—Dyeing units, skein, 28 to 56 stick
4—Extractors, 24" to 60"
4—Fulling mills, double compartment
2—Kettles, Woolen type, 6' boxes
4—Mangles, 40" to 66", 2 & 3 rl units
12—Nappers, 66" to 90" width, 20, 24, & 36 rls, Double & single acting and Knit goods
2—Presses, Rotary, 66" & 78" double bed units
3—Shears, single blade, 36" to 80"
2—Shears, double blade, 66½"
6—Tenter Frames, clamp, 10' x 40", 30' x 58", 30' x 63", 60' x 80", 90' x 50"
1—Steamer, open, 68" x 21" w/blanket

NEAR 138TH STREET

CARDING, SPINNING & WEAVING

1—16" x 48" Breast, 3 wrkrs 5", 3 strippers
1—Card grinder, adjustable, 60"
2—Sets Cards, shoddy, 5 cyl. 48" x 48" complete
2—Sets, Cards, worsted, 2 cyl.
1—Card, sample.
4—Cards, shoddy, 5 cyl. 48" x 60"
1—Card, double cyl, worsted, 48" x 48"
10—Combers, 10" coilers, 10½" lap.
4—Combs, worsted, complete w/circles

WE BUY
SINGLE UNITS—
COMPLETE PLANTS
SEND YOUR LIST TODAY

2—Condensers, 8 rub aprons, 60", 20" ring doffer, spool stand
4—Condensers, ring rub, for 48" woolen cards
2—Compressors, warp, 48", 60 ends, w/ clock
1—Draw box, 2 spindle, 14 x 9
1—Duster, intermittent Rag, 48", capacity, 800-1000 lbs.
2—Feeds, Bramwell & picker, 48" & 60"

Write for complete list

6—Feeds, intermediate, camel back
2—Garnets, 1 cyl, table feed, 48"
8—Gill Boxes, single, double head units
6—Intermediates, 9x4½, self balancing, 84 & 114 spndls.
3—Looms, Draper D 40" 8 harness
43—Looms, Draper D 42" 8 & 12 harness
52—Looms, shuttleless, for elastic webb 2⅞"
63—Looms, Draper E 30" automatic
10—Looms, Draper E 40"
16—Looms, Draper E remodeled, 43½"
3—Looms, C&K 82" 3x3, 12 harness
3—Looms, C&K 82" 25 Harness 4x4
5—Looms, C&K 82"
8—Looms, C&K 72" 4x4 16 Harness
2—Mules, 2" gauge, 210 & 240 spindle
2—Mules, 650 spindles, worsted
3—Mules, 2¼" gauge, 360, 384 spindle
3—Mules, 1⅞" gauge, 330, 360 spindle
5—Quillers, 378 spindle, 2¼, 2½, & 2¾ gauge
1—Picker, waste, 22" x 30" complete
2—Pickers, Burr, 24" & 48" feed tables, Bramwell auto feeds
1—Slubber, 12 x 6, 64 spindles
2—Slubbers, 11 x 5½, 68 spindles
2—Speeders, 8 x 3½, 144 spindles
2—Spinning Frames, worsted 3½" pitch, 144 spindles
8—Spinning Frames, double side, 4" pitch, 4¼ x 2⅝" bobbins
8—Spinning Frames, 3¼" gauge, 208 spindles
9—Spinning Frames, cotton, 3" gauge
10—Spinning Frames, Whitin, 3" gauge, 204 & 252 spindles
4—Spoolers, warp compressor, 48", 60 ends
2—Twisters, 5" ring, 7" gauge, 88 spindles
10—Twisters, 3" ring, 216 spindles
2—Twisters, Fales & Jenks, 2" rinds 220 spindles
113—Twisters, rayon, 2 deck, 128 spindles
4—Winders, Lazenby, 30 spindles
5—Winders, Foter #30, 100 spindles
2—Winders, Universal, #80, 14 spindles

MISCELLANEOUS Spare Parts, Bristle Brushes, Expander Rolls, Rubber & Wood rolls, etc.

NORMAN M. McDOWELL ASSOCIATES
2568 Park Avenue Bronx 51, New York
Tel.: MElrose 5-1772

May 1946 be the first year of a Century of Peace and Prosperity . . . "CONSOLIDATED"

EXTRACTORS

4—K & G & Burkhardt 60" Extractors, rubber baskets.
1—Hercules 48" Extractor, copper basket.
3—26" & 30" Hercules Extractors.
1—Fletcher 48" whirlwind Extractor.

DYEING MACHINES

1—Obermaier Yarns Dyer.
5—K & W & Giles Skein Dyers.
2—Buhlman 100-arm skein dyers.
2—Haveg Totally enclosed Dye Becks.
3—Rotary 2 & 3 Comp. Monel Dyers.
12—Franklin Cast Iron Pkg. Dyers, 6-600#.

DRYERS

3—P & S & National Loop Dryers.
1—P & S Raw Stock Dryer, automatic feed.
3—Skein Truck Dryers.
1—V. V. 5-section Net Dryer, complete with fans.
1—Pin Tenter Dryer, 64".
1—Riggs & Lombard Cloth Dryer.
2—P & S Hurricane Dryers.
2—3-Apron Conveyor Dryers.

NAPPERS

2—D & F Single Acting Nappers, 60" & 84".
3—Gessner & Woonsocket S. A. Nappers, 84"-90".
2—Woonsocket 86" 20-roll S.A. B.B. Nappers.
2—Woonsocket 86" 36-roll D.A. B.B. Nappers.
1—Woonsocket 86" 24-roll D.A. B.B. Nappers.

TENTER FRAMES

2—Textile Fin. & Butterworth Tenters, top opening clips, 60' & 90'
1—Heathcote Pin Tenters, 30'-50" wd.

KIERS

2—Textile Kiers, 9'-6" x 11'-9".

PALMERS-PALMER QUETCH UNITS

2—Butterworth & Textile 60" & 80" Palmers.
1—V.V. 88" Palmer Quetch Unit.
2—V.V. & G.M.C. 60" Palmerettes.

PADDERS - MANGLES - QUETCHES

1—V.V. 60" 2-roll Dye Padder, rubber rolls.
2—2-roll Padders, 94" & 98".
2—Butterworth 50" Starch Mangles.
3—Butterworth & Morrison 2 & 3-roll Quetches, 50"-72".

REAMERS - BATCHERS

5—Textile 50", 60", 66", & 72".
4—2-Roll B.B. Batchers, 50"-72".

FLAT FOLDERS—DOUBLERS

2—E & H Flat Folders, 50"-60", with motors.
3—P & W & Windle Doublers, 50"-65".
1—96" Doubler & Folding machine.

COATING MACHINES

3—Plastic & Rubber Coaters, 50"-72".

DECATERS

1—P & W 72" Full Decater.
1—P & W 72" Semi-Decater.

WASHERS

1—V.V. 6-Comp. Full Width Washer, 60".
1—V.V. 8-comp. full width Washer, 50".
1—3-comp. monel rotary Washer.
2—Cloth Washers, 4 string

BRUSHING MACHINES

2—74" Rotary Cloth Brushers.

CALENDERS

1—V.V. 3-Roll Calender, 62".
1—Farrell 3-roll Calender, 65".
1—Perkins 2-Roll Hydraulic 65" Calender.

SHEARS

3—P & W 2 Blade Shears, 66½".
1—P & W Single Blade Shear, 60".

3—Morrison 50". S.S. B.B. Dye Jiggs. Complete Hosiery Knitting Plant. Complete Outerwear Knitting Plant.

DYE BECKS—DYE JIGGS

1—Butterworth Scouring Jigg.
10—Morrison & V.V. 6'-12' Dye Becks, S.S. lined.
4—Textile 50"-60" S.S. Lined Jiggs

PRINT MACHINES

1—Franklin 45" 3-color Printer, complete with mandrels, rollers and jack.
1—R.B.&F. 4-color Print machine, 42".

TUBERS & MEASURING MACHINES

3—Tubing & Measuring Machines, 50"-60".

WEAVING MACHINES

150—C & K 4 x 1 automatic, 47½", looms.
100—Draper Mod. D. auto. looms, 40", motor driven.
8—C & K 72" 4 x 4 Jacquard Looms.

KNITTING MACHINES

Lot of Hosiery Knitting Machines.
25—Cooper Spring Needle Machines.

PRINT MACHINE EQUIPMENT

BTA & BTS motors, 25, 35 & 50 HP, mandrels, star gears, doctors blades.

AGERS

2—Butterworth Cast Iron Agers, 18' long.

PREPARATORY MACHINES

2—Sargent & C & M Burr Pickers.
4—Shoddy Rag Pickers.
1—Saco Lowell Vertical Opener.
1—Sargent Cotton Picker.

CARDING MACHINES

15—Sets D & F Worsted Cards, 48" x 48".
4—Bramwell & Harwood Feeds, 48"-60".
8—Whitin D-2 Combers.
5—Hetherington Sliver & Ribbon Lap Machines.
2—5-cylinder 48" x 48" Shoddy Cards, equipped with Bramwell Feeds & Metallic breasts.

SPINNING & WINDING MACHINES

35—Whitin & Mason Spinning Frames, Band & Tape Drive.
15—H&B Drawing Frames, 12" coilers.
6—Platt Worsted Mules.
1—Sipp Double Deck Winder.
1—P.S. Ring Twister, 5" band drive.
1—Fly Twister, 6½" Traverse, 4¼" dia.
2—Foster #101 Cone Winders.
8—Atwood 5-B Twisters.
12—Universal #50 & #90 Winders.
2—Sipp 72" Warpers.
4—Jack Spoolers, complete with creels.
7—H & B Speeders, 5" baube.

"AMERICA'S BEST BUYERS" WANT YOUR IDLE EQUIPMENT

SINGLE ITEMS TO COMPLETE PLANTS

SEND YOUR LIST NOW

THE KEY TO SAVING TIME AND MONEY

FOR OVER A QUARTER CENTURY A SYMBOL OF CONFIDENCE

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Address All Textile Inquiries to

TEXTILE DIVISION, PATERSON 2, N. J.

33-41 BERGEN ST. Tel. ARmory 4-6540

15 PARK ROW • NEW YORK CITY 7 • N. Y.

FOR SALE

7 Motorized Large package single deck Scranton Twisters, 100 spindles per machine. Large Spindles. 7" center, 4½" cork rools. Large bakelite Separators. 10,000 Fibre Head Take-up Spools for these twisters. 4¾" traverse, 3½" head, 2⅛" barrel. Quantity of new and used replacement parts for these twisters, such as gears, idlers, cork covers, spindles, etc. 500 Wood Bobbin Boards, large space, 20 pins each to accommodate the 10,000 spools.

1 Late Model Atwood Redraw Machine. 7" traverse. Approximately 1,000 7" traverse fibre head spools for this machine.

7—6½ ounce Atwood Motorized 5B Doubler Twisters. 5¼" spacing, equipped with 2⅞" Eadie rings, Hufford ball bearing lap rollers, separators, large whorl swing spindles, approximately 5,000 bakelite 5B steaming spools, 2½" heads, 5¼" traverse, and 1¼" barrel, for the above machines.

7 Motorized Scranton duplex doubler twister machines. 100 Spindles per machine. 5" spacing, 2¾" Eadie rings.

1 Mertz Yarn conditioner complete with vacuum, pump, and motor.

3500 Large package bakelite 5D spools. 7" traverse. 3" head. 1⅜" barrel.

3500 5B fibre heads. 6" traverse. 2⅜" head. 1¼" barrel.

25,000 5B fibre spinner spools. 4" traverse. 3" head. 1⅝" barrel.

22,000 metal head spools. 4" traverse. 2⅝" head. 1⅝" barrel.

500,000 Bakelite headless package tubes. 3½" long. 1½" diameter. 5,000 mandrills for these tubes. 1650 self stacking tube racks. 20 tube capacity for above headless package tubes.

Immediate Delivery. All machinery and supplies are subject to prior sale.

WM. RABINOWITZ & SONS

214-222 Hamilton St., Allentown, Penna.

Phones 37497-37498

Announcing change in firm name

FROM

Textile Salvage Company

TO

Sam Schwartz Machinery Corp.

TEXTILE MACHINERY AND SUPPLIES

P. O. BOX 1461 — TELEPHONES 3-7764, 3-7765

EFFECTIVE IMMEDIATELY CHARLOTTE 1, N. C.

FOR SALE

328 Section Beams 54¼" B.H., 24" heads, 9" dia. barrels, both cast iron and wooden heads.
1 Sturtevant Multivane Blower size 5.
2 Worcester Warp Compressor Spoolers 32" drum.
1 72" C&M Cloth Cradle.
1 Tolhurst 40" Extractor, copper basket, belt drive.

BOBBINS — SPOOLS — SKEWERS

We are prepared to assist you with your bobbin requirements. Our shops are fully equipped for reconditioning, resizing or reenameling your bobbins or spools and to retip skewers. We have the largest stock to select from. Send us your samples—we will reply promptly.

Direct Factory Agents Walter L. Parker Bobbin & Spool Co.

BAY STATE TEXTILE CO.

220 HARTWELL STREET • FALL RIVER, MASS.

SURPLUS MACHINERY LIST

ITEM 11001

1 COMPLETE BACK WASHING UNIT

ITEM 11001-A

BACK WASHER

1—set of 2 bowls, 33" wide x 7' 4" long inside measurement x 14" deep.
2-set Nip Rolls—11" dia. x 26" face in #1 & #2 bowl
1—Nip Roll #2 bowl—13" dia. x 28" face, Upper roll Rubber covered. Lower roll Brass
3—brass Nip Rolls 5" dia. x 28" face in each bowl

ITEM 11001-B

BACK WASHER DRYER

Taylor Wadsworth & Co., Ltd., 9 cylinder—41" C side x 11' 10" long x 7'6" high containing 9, 23½" dia. x 31" driver drums
5—pair glass panelled doors & 1 hatch door in top slope.

ITEM 11001-C

DOUBLE HEAD BALLING GILL BOX

Item 5594 P. & W. 4 CYLINDER TIGER, 68" wide.
C. & A. 6' 8" wide x 5' 6" long
Above trains of three—all belt & Chain driven by 25 H.P. G.E. Motor, 900 R.P.M.

ITEM 9793

1 CURTIS & MARBLE SHEAR

66 in. (Belt Driven) Single Cylinder

Collins & Aikman Corp.

SALES & SALVAGE DIVISION

Located at Our Plant "L"

6th & Upland Aves.

Upland, Delaware Co., Pa.

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KNITTERS - RIBBERS - LOOPERS
CYLINDERS - DIALS - TRANSFERS
RIBBER CYLINDERS & DIALS
UNION SPECIAL SEAMERS
NEEDLES FOR EXPORT

C. M. FRENCH

Commercial Trust Bldg. Philadelphia 2, Pa.

PARTS FOR 48" WOOLEN CARDS

Bramwell Feed-boxes; Doffer Combs; Metallic Breasts, Intermediary Feeds; Side-draw Units; 9" & 12" Ring Doffers; Barker 2-bank Rubb-apron Condensers; Spool Stands; Used Card Clothing-Fancies, Rings, Workers. Also: Waste-end Blower Return System; 60" Bramwell Feeds.

PAUL M. BROOMFIELD

Used & Rebuilt Wool Machinery

15 Hathaway St., Boston 10, Mass.

Tel: Longwood 3980

- Printing Machines
- Dry Cans
- Calenders
- Quetches
- Extractors
- Tantering Frames
- Beamers & Tubers
- Doubling & Folding

Looms—Warpers—Winders—#90 & #50 Universals
Ribbon Machinery & Equipment

A. & M. BLANK CO., INC.

49 STATE ST. PATERSON, N. J.
Sherwood 2-1367 Lambert 3-9523

KNITTING MACHINES

Scott & Williams — Banner — Wildman — Reading — Kalio — etc., etc.

All types of hosiery mill equipment on hand

THE MORRIS SPEIZMAN CO.

508-14 West Fifth St. Charlotte, N. C.

One Sargent Multiplex Burr picker 48"

including a Sargent self feed all in good condition.

DOYLE & MILLER

FERNWOOD PENNSYLVANIA

FOR SALE

BUTTERWORTH CALENDER

7 ROLLS—80" FACE

3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.

AMES BAG CO.

10 EAST 40TH ST. NEW YORK CITY

Excellent Textile Equipment

LOOMS

157—Crompton & Knowles 4 x 1 Automatic Box Looms, 20 harness, Single Index C & K Dobbies.

168—Crompton & Knowles 4 x 1 Automatic Looms, 55" reed space, individually motor driven.

100—Draper Modified D Looms, 39" cloth, motor driven.

31—Draper Automatic Modified D Looms, 42" cloth width, individual motors.

8—Crompton & Knowles 72", S-3, 2 x 1, 25 harness Looms.

WINDERS

15—Universal Winders with Bunch Builders.

EXTRACTORS

2—60" Steam Driven Centrifugal Extractors, Perforated Copper Baskets, Quick Opening Cover, 600 R.P.M.

CAN DRYER

1—Phoenix Copper Can Dryer, approx. 24 Cans, 23" dia. 50" face, Bucket Type, Vertical Stack, Chain Drive, no motor.

LOOP DRYER

1—National Loop Dryer, 24' long, 11' high, 84" wide, revolving sticks, Drive, Traps, Motors, Airfin Heater.

DRYERS

1—6 Can Dryer, Copper Cans, 23" diameter, 50" face, complete with exception of motors.

1—Textile Can Drying and Rolling-up machine, Copper Can 36" diameter, 50" Face.

1—Textile Finishing Machinery Company set of 8 Copper Cans—2 stacks, 4 Cans to a Stack, Vertical Stacks, 50" wide.

1—Textile Finishing Machinery Co. Copper Can Dryer consisting of 8 cans, 23" dia. 54" face with take-up, let-off, Reeves Variable Speed transmission.

1—Textile Rolling-up and steam machine equipped with copper can 40" dia. 48" face.

1—Textile Finishing Machinery Co. 8 Can Dryer, consisting of Copper Tinned Cans, 23" diameter, 54" Face with Take-up, Let-off, Reeves Drive, A.C. Motor.

1—Van Vlaanderen 5-tier, 4 section Conveyor Dryer, with Rods, 60" face, Motor Driven Fans, Airfin Heating Units.

DYEING EQUIPMENT

1—Rice, Barton & Fales Dye Jigg, 50" Roll, Wooden Tub, Metal-lined, complete with 2 Motors, 230 Volt, D.C.

4—Textile Dye Jiggs, 54" Wooden Tub, 2 Rubber-covered Ball Bearing Top Rolls, 4 Stainless Steel Immersion Rolls, Bevel Gear Drive with 1 DeLaval Worm Reduction Gear Unit, Direct connected to Lincoln 10 H.P. A.C. Motor, 550 volts, 60 cycle, 3 phase, 1200 RPM, with Control.

1—National Dyeing Machine 24' long, 11' high, 84" wide, complete Drive and Traps.

TENTER FRAMES

1—Textile 40' Pin Tenter Frame, Link Belt Drive, #3 Reeves General Electric 5 HP, 60 Cycle, 3 Phase Motor, 60" wide, General Electric Guiders, Steam Heating Coils.

COTTAGE STEAMER

1—Robert Metcalf Cottage Steamer, 10' long x 8' wide.

DYE BECKS

1—Stainless steel lined 18" dye beck Tank 18" x 30" x 96" Single Slot reel, Brass Idler rolls. Geared link chain drive.

1—20' Stainless Steel-lined Dye Beck.

1—2' Dye Beck, geared head Motor, Reversing Switch, Push Button Starter, AC 220/440 volt Motor.

1—3' Dye Beck, geared head Motor, Reversing Switch, Push Button Starter, AC 220/440 volt Motor.

1—5" Dye Beck, geared head Motor, Reversing Switch, Push Button Starter, AC 220/440 volt Motor.

QUETSCH

1—Van Vlaanderen 3 roll quetsch 60" face, Motor driven, chain drive by 1 h.p. General Electric AC Motor.

SCUTCHER

1—Textile 58" Roller bearing Scutcher.

KNITTING MACHINES

120—Circular Rib Knitting Machines, 10" to 18", 8 feed, 10 cut to 13 cut.

SEWING MACHINES

Singer, Union Special, Merrow, Metropolitan and Willcox & Gibbs Flatlocks.

COUNTERS

30—Veeder-Root, Cloth Counters.

FOLDERS

1—Eastwood Gray Goods Folder, 60" wide.

3—E & H Flat Folders, 45" to 60" wide.

KETTLES

7—Copper Steam Jacketed Mixing Kettles, equipped with Double Motion Bronze Agitators, 70 to 350 Gallon capacity.

METER

G. E. Steam flow meter.

DECATOR

1—72" Decator, with Blanket, Nash Vacuum Pump and Motor.

PRINTING MACHINES

2—R. B. & F. 42" Multicolor printing machine.

PRINT MACHINE MOTORS

5—Print Machine Motors, 23 to 35 H.P.

PUMP

1—#1 Nash Engineering Pump, Type 960.

BUTTON BREAKERS

2—50" Van Vlaanderen Button Breakers.

CHAIN

1—Hoey Tenter Chain, 1100 Textile Brass Tenter Clips.

REMEMBER
Republic Textile
EQUIPMENT COMPANY
40 WORTH STREET NEW YORK CITY
Purchase and Sale of Used Machinery
REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

AGER, Tower, new
AGITATOR, 2 propeller
AGITATOR, Porter, Whirl Pool
BEAMER, 60" Van Vlaanderen
CALENDAR, 4 roll, 50" hydraulic
CALENDAR, 3 roll 44" VV, lever pressure
COTTAGE STEAMER, 14' x 84"
DECATER, Semi C&M 72"x12" dia.
DECATER, full Gessner
DECATER, P&W 50"x36" dia.
DRIVE, Reeves #000
DRY CANS, 12 copper 50" x 28" vert.
DRY CANS, 144" x 23" vert. copper
DRYER, Loop P&S 30' x 84"
DYE BECKS, Stainless steel 4' to 20'
DYE TUBS, Wood, 6' and 12', comp. motorized
DYEING MACHINE, KW, 28 stick, 48" wd. monel
DYEING MACHINES, Smith Drum, Paddle type
DYEING MACHINE, Smith Drum, Pocket type
DYEING MACHINE, Smith Drum, 60 Arm
EXTRACTORS, Beam 50" & 60" BB
EXTRACTORS, Open Top Tolhurst 40"
EXTRACTORS, VV Copper basket 54"
EXTRACTORS, VV Rubber basket 60"
EXTRACTOR, Gessner Vacuum 72"
FANS, Exhaust 3 blade propeller 30", 36", 48"
FLOCK STENCIL MACHINES with patterns
FLAT FOLDERS, Elliott & Hall Adjustable
FULLING MILLS Hunter #10
INFRA RED units, complete with blowers
INSPECTION TABLES, with DC motors, 47"
JIGGS, monel lined 60", st.st. 50" & 60"
MEASURING MACHINE P&W, model AWC
MOTORS, BTA 7½ HP 30 HP
MOTORS, over 300 GE ¾ to 5 HP 220 volt
PACKAGE DYEING MACHINE, Obermaier
PALMER, 62"
PALMER QUETCH, 54" Butterworth
PALMERETTE, 60" face, General Machine
PRINT MACHINE, 3 color 60"
PRINT MACHINE, 1 color 60"
PRINT MACHINE, 10" sample or Ribbon
QUETCH, 3 roll Morrison 60" Ball bearing
SEWING MACHINES, Arlington bicycle
SEWING MACHINES, Merrows 60ABB and 60D3B
SCUTCHER, 72" Birch Bros. with #3 Nash Pump
SHEAR, Hermas 4 Knife 70" wide
SQUEEZE ROLLS, 12" x 10"
TENTER FRAME, W&J, 30' x 54" wide
TIGERS, Dry P&W & C&M
TUBER, with Examining board 80"
TUBERS, Paterson, Variable speed motors.
TUBER, VV with doubling attachment
WARP COMPRESSOR CREEL
WASHERS, Slop, New Stainless steel
WASHER, GL, Rope type
WASHER, 3 compartment Open
WOOL WASHERS, J. Hunter 6 & 8 ft.
WATER SOFTENER & FILTERS

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited.

CADGENE MACHINERY CO.
5th Ave. & McLean Blvd.
P. O. Box 1206 Paterson 4, N. J.
Sherwood 2-6577

FOR SALE

9—Haskell & Dawes 2 Spindle 8" x 10" Formers

2—32 spindle Fairbairn Twine Polishing Machines

1—Silver & Gay 6 Spindle 8" Pitch Balling Machine

3—North Chesterton Machine Co. Ball Winders 12 Spindle each

Sash Cord Braiding Machines

Robert Solomon & Co., Inc.
Dealers in Textile Equipment
30 W. Houston St. New York, N. Y.

HARRY STEPHENSON
IMPORTER, DEALER AND MANUFACTURER
TEXTILE MACHINERY AND APPLIANCES
New and Used
River Works, Andover, Mass.

FOR SALE
30" LOOMS
63—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.
AMES BAG CO.
10 East 40th St. New York, N. Y.

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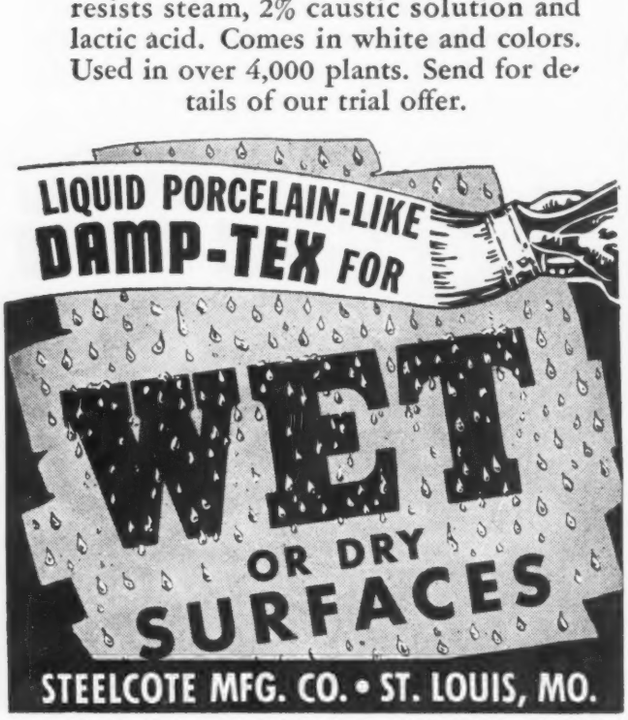

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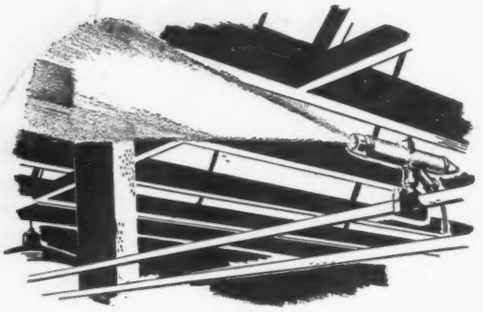

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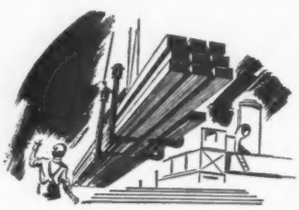

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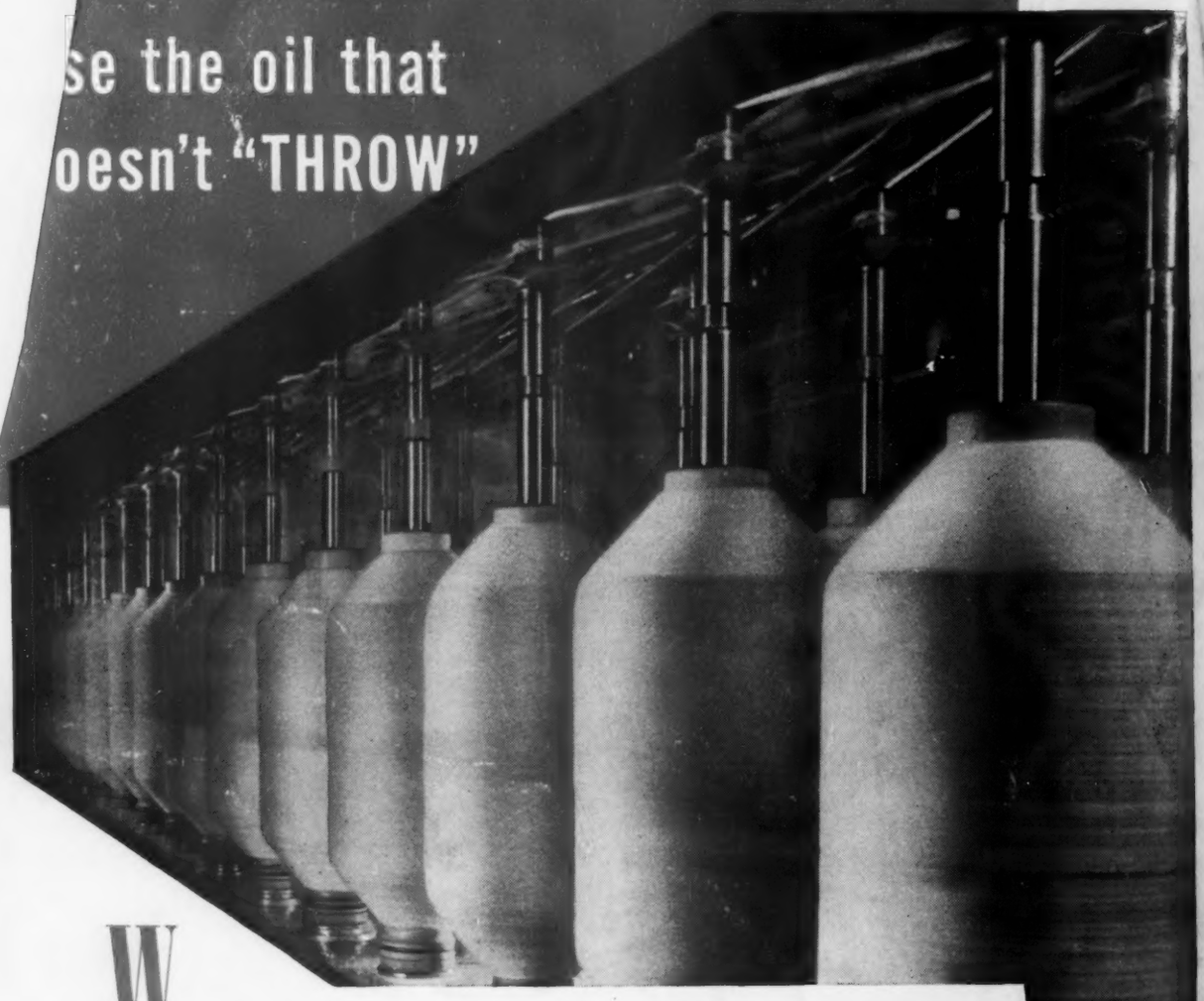

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